**EB-2011-0140**

**IN THE MATTER OF** sections 70 and 78 of the *Ontario Energy Board Act 1998*, S.O. 1998, c. 15 (Schedule B);

**AND IN THE MATTER OF** a Board-initiated proceeding to designate an electricity transmitter to undertake development work for a new electricity transmission line between Northeast and Northwest Ontario: the East-West Tie Line.

**RESPONSES TO INTERROGATORIES TO**

**RES CANADA TRANSMISSION LP ("RES")**

**FROM**

**ONTARIO ENERGY BOARD**

**(on the evidence of the Applicant, RES CANADA TRANSMISSION LP)**

**MARCH 28, 2013**

## Interrogatory #1

At page 4 of Exhibit E, Tab 5, Schedule 1 of its designation application, RES describes the Energy Gateway Transmission Expansion Program (including the Populus to Terminal Project, the Mona Oquirrh Project, the Sigurd to Red Butte Project, the Gateway West Project and the Gateway South Project) as representative of the MidAmerican Group's development experience. For these five projects, was the development and design of the overhead lines undertaken by MidAmerican's internal staff or by external consulting engineers under MidAmerican's direction?

**Responses:**

As stated in RES Transmission's Application at Exhibit E, Tab 5, Schedule 1, page 4, the MidAmerican Group's success in the Energy Gateway Transmission Expansion Program ("**Gateway Program**") was, in part, the result of utilizing key internal staff who are experts in their fields. This ensured that the company's core principles of providing a safe, reliable, adequate and efficient product were incorporated into every aspect of the project.

Employees of the MidAmerican Group carried out development and functional specifications and design activities in respect of the overhead lines for the five projects that comprise the Gateway Program. External engineers were contracted by the MidAmerican Group and supervised by senior MidAmerican employees, to develop detailed line siting plans and access road layouts and provide general permitting support.

## Interrogatory #2

Does MidAmerican expect to be continuing development and engineering work on the Energy Gateway Transmission Expansion Program and other major projects contemporaneously with development of the proposed East-West Tie project?

**Responses:**

RES Transmission's proposed Project schedule assumes that development and engineering work in respect of the East-West Tie Line will occur in the period commencing the third quarter of 2013 and ending in the third quarter of 2016. In this period, two of the five projects that comprise the Gateway Program – Gateway South and Gateway West – will be undergoing final NEPA permitting, and thus near the end of development. The Sigurd to Red Butte Project will be under construction in 2013 and thus finished with development and engineering. The final two Gateway projects will be fully constructed by May 2013**.**

As shown below, the MidAmerican Group have completed several other projects simultaneously and continue efforts on other ongoing major projects, further demonstrating a proven ability to manage multiple large scale projects simultaneously.

| MidAmerican Group Transmission Projects | | |
|---|---|---|
| | **Project** | **In-Service Date** |
| 1 | St. George – Red Butte 345 kV Line & Station, UT | Apr, 2010 |
| 2 | Gateway Central Segment -Populus to Terminal 345 kV Line, UT | Nov, 2010 |
| 3 | Camp Williams to 90th South Line, UT | Nov, 2010 |
| 4 | Pinto Substation 345kV Series Capacitor, UT | Nov, 2010 |
| 5 | California Oregon 500 kV Intertie Transfer Capability, OR | Feb, 2011 |
| 6 | Red Butte 345 kV Substation, UT | May, 2011 |
| 7 | Meridian Substation - Install 230 kV Capacitor Bank, OR | Jun, 2011 |
| 8 | Terminal 345 kV Substation - Replace Transformers and Upgrade Substation, UT | Dec, 2012 |
| 9 | Dave Johnston – Casper 230kV No 1 & 2 Line Rebuild, WY | 2010 - 2012 |
| 10 | Lakeside II 345 kV Interconnection, UT | May, 2013 |
| 11 | Gateway Central Segment -Mona Oquirrh 230/500 kV Line, UT | May, 2013 |
| 12 | Gateway South Segment -Siqurd to Red Butte 345 kV Line, UT | Jun, 2015 |
| 13 | Vantage-Pomona Heights 230 kV Line, WA | Dec, 2015 |
| 14 | Gateway West 500 kV Line, WY, ID | 2018 - 2022 |
| 15 | Gateway South 500 kV Line, WY, UT | 2019 - 2021 |

## Interrogatory #3

For the projects in the Energy Gateway Transmission Expansion Program, please indicate whether each of the following was undertaken or led by the Bureau of Land Management of the US Department of the Interior or by MidAmerican:

- the preparation of the environmental analyses and the preparation and publication of the Environmental Impact Statement(s);
- consultation - including mailing of material to the public, publication of notifications in the newspapers, and hosting of public open houses;
- coordination with local, state and federal governments and cooperating agencies; and
- the selection of the preferred alternative(s).

**Responses:**

**Environmental Impact Assessment:** The Bureau of Land Management ("**Bureau**") is the federal agency that is subject to the United States *National Environmental Policy Act* ("**NEPA**"). Accordingly, it has overall responsibility for the preparation of the Environmental Impact Statements ("**EIS**") that are required for projects that are subject to NEPA, such as the Gateway Program. Notwithstanding the fact that the Bureau is responsible for complying with NEPA requirements, project sponsors typically work with the Bureau throughout the process. In the case of the Gateway Program, the MidAmerican Group coordinated with the Bureau throughout the environmental assessment process. The MidAmerican Group retained the third-party environmental consultant that performed the environmental assessment on behalf of the BLM and MidAmerican internal engineering and environmental engineers supported the consultant in the preparation of the EIS.

**Consultation:** The MidAmerican Group and the Bureau both carried out consultation activities in connection with the Gateway Program. The Bureau carried out its consultation responsibilities under NEPA guidelines. The MidAmerican Group implemented its own public outreach programs, providing opportunities for local governments, communities and the public at large to provide comments to MidAmerican directly. This consultation provided the MidAmerican Group with an opportunity to discuss each project with a wide range of stakeholders, thereby gauging local concerns, constraints and obstacles that the project was likely to encounter. This early outreach resulted in fewer comments in the final stages of the permitting process and fewer appeals.

**Agency Coordination:** The Bureau acted as a clearing house, providing coordination with those federal, state and local governments who participate as cooperating agencies in the NEPA process. However, the MidAmerican Group also implemented a Community Working Group model whereby local government agencies and stakeholders participated in organized progress meetings to: (i) obtain updated information on the project; (ii) ask questions; and (iii) express both favorable and unfavorable sentiments, from their respective perspectives. The Bureau was invited and frequently attended these meetings.

**Selection of Preferred Alternative:** The NEPA process was designed to inform federal agencies, the public and other stakeholders of impacts associated with the construction, operation, maintenance and decommissioning of transmission facilities on federal lands. The MidAmerican Group worked with the Bureau to identify route alternatives, in which the Bureau determined the preferred alternative taking into consideration MidAmerican’s technical and engineering requirements.

## Interrogatory #4

Please provide copies of the most recent credit rating reports for each of:

- MidAmerican Energy Holdings Company
- Berkshire Hathaway Inc.

**Responses:**

The most recent credit rating reports for MidAmerican Energy Holdings Company and Berkshire Hathaway Inc. are included as Appendices 1 and 2, respectively.

## Interrogatory #5

On page 8 of Exhibit M, Tab1, Schedule 1 of its designation application, RES states that some aspects of the Bruce-Milton MOU signed between the Minister of Energy and Hydro One would not necessarily be applicable to RES Transmission. Please explain which aspects of the Bruce to Milton MOU RES considers inapplicable to RES Transmission.

**Responses:**

To be clear, RES Transmission is willing to enter into an MOU with the Minister of Energy in respect of the delegation of the procedural aspects of consultation. RES Transmission expects that such an MOU would be very similar, but may not be identical, to the Bruce-Milton MOU.

Minor differences between the Bruce-Milton MOU and the East-West Tie line MOU would be a result of the differences in circumstances of the projects themselves. For example, the Bruce-Milton MOU required Hydro One to develop a detailed First Nation and Métis consultation plan. RES Transmission, on the other hand, has already developed a comprehensive consultation plan for the Project (Application, Exhibit M-3-1) in accordance with the Board's Filing Requirements. Moreover, the Bruce-Milton MOU did not list the specific First Nations or Métis communities that Hydro One was required to consult. In contrast, the Minister of Energy has already provided a list of First Nations and Métis communities that may be potentially affected by the Project (May 30, 2011 letter to the Ontario Power Authority). RES Transmission has already reached out to these communities as well as other First Nation and Métis Communities.

The examples described above are relatively minor and simply reflect the fact that the Bruce-Milton and East-West Tie Line are different projects, carried out under different circumstances.

## Interrogatory #6

Do the Project Execution Chart and dates shown in Exhibit N, Tab 1, Schedule 2 apply to the reference option? RES's preferred option? Or both?

**Responses:**

The Project Execution Chart applies to **both** the RES Transmission's Preferred Design and to its Reference Design. It assumes that both the Preferred Design and the Reference Design are constructed along the Preliminary Preferred Route.

## Interrogatory #7

Please provide the charts on pages 3-6 of Exhibit P Tab 4 Schedule 2 in an excel spreadsheet so that it is clearly visible to the reader (the pdf version is not large enough to clearly read).

**Responses:**

The Excel versions of the referenced charts are included as Appendix 3 hereto**.**

## Interrogatory #8

The IESO in its Feasibility Study IESO_REP_0748 compares the relative merits of a new high-capacity single-circuit line versus a new double-circuit line with respect to a one-plus-one contingency. The Study describes control actions (e.g. generation dispatch, load rejection, increased transfers) , which would be necessary in the event of a second single-element contingency after experiencing an initial single-element contingency or outage if the new line is a single circuit line.

a) Can RES provide any evidence that the IESO, the OPA or RES determined the availability of the control actions noted in IESO_REP_0748?

b) Can RES provide any evidence that the IESO, the OPA or RES determined the annual cost of the control actions noted in IESO_REP_0748 (up to 300 MW additional generation or import, or some lesser amount of generation/import for armed load rejection up to 150 MW)? If yes, and assuming that the economic analysis is conducted over a 50 year period, what is the total cost?

**Responses:**

a) Yes, the IESO has evaluated the control actions (e.g. increasing generation, increasing imports, or curtailing or rejecting load) against the load security criteria found in Section 7.1 of its Ontario Resource and Transmission Assessment Criteria and has found that sufficient control actions are available to satisfy this criteria. In this regard, please see the letter from the IESO dated March 25, 2013 included as Appendix 4 hereto.

b) The IESO has not provided the cost of the control actions. As the system operator, only the IESO can evaluate the cost of the IESO-specified control actions. In this regard, please see the letter from the IESO dated March 25, 2013 included as Appendix 4 hereto.

## Interrogatory #9

Did the IESO study the same One-plus-One contingency, also known as an N-1-1 contingency, in the REP-2 feasibility study conducted on behalf of RES Canada that it studied in IESO_REP_0748? If yes, then please produce this study. What are the IESO's conclusions regarding the requirement for control actions as noted above after the loss of the new single circuit line (within the 30 minutes allowed to adjust the system prior to the second event in the N-1-1)?

**Responses:**

The IESO did not consider the effects of a one-plus-one contingency in its Feasibility Study for RES Transmission's Preferred Design (Application at Exhibit H-2-3), as in the event of such a contingency, the control actions described in IESO_REP_0748 for the single-circuit Alternate Case would apply to RES Transmission's Preferred Design. The IESO states, in IESO_REP_0748, that "all of these control actions [as described in the study as a result of a one-plus-one contingency] would comply with the IESO's criteria," which includes adherence to NERC and NPCC reliability standards.

## Interrogatory #10

Diagram 32 of the Feasibility Study in Exhibit I- Tab 2 of the RES Submission shows a voltage stability limit of 685MW for transfers across the EW-Tie Interface following the most onerous contingency which would involve losing both circuits of the existing double-circuit line between Wawa TS and Marathon TS. Diagram 8 of the IESO's Feasibility Study of August 2011 shows a voltage stability limit for the Reference Case of 686MW for transfers across the EW-Tie Interface following the loss of both circuits of the new double-circuit line between Wawa TS and Marathon TS.

Please explain how your Preferred Design 'has superior electrical performance attributes' when its EW-Tie transfer capability would be virtually identical to that of the Reference Case, but would require both a higher-rated SVC at Marathon TS, and post-contingency switching of the tertiary-connected reactors at Marathon TS to achieve this transfer.

**Responses:**

RES Transmission's Preferred Design has superior voltage control ability under the conditions simulated by the IESO. While a higher-rated SVC at Marathon TS and post-contingency switching of the tertiary-connected reactors at Marathon TS are required to provide reactive power during peak transfers, RES Transmission's Preferred Design has superior electrical performance attributes when the line is not fully loaded.

**<u>Voltage Stability during contingencies</u>**

The Feasibility Study for RES Transmission's Preferred Design (Exhibit H-2-3) and for IESO's Reference Case and Alternative Case (Exhibit I-2-2) analyzed electrical system performance at rated transfer capabilities under multiple contingency scenarios. Under some scenarios, the single circuit Preferred Design is superior in terms of electrical performance and under some scenarios, its performance is quite similar to the double circuit Reference Case. For example, in the scenario of a double contingency involving the line between Marathon TS and Lakehead TS, the voltage stability limit of the Preferred Design is **719 MW** compared to **671 MW** (Exhibit H-2-3, Diagram 34) for the Reference Design (Exhibit I-2-2, Diagram 11).

**<u>Voltage Control during normal transfer levels</u>**

Voltage stability limits are but one of many criteria that determine the final rating of the East-West Tie line. There are other reasons why the Preferred Design has superior electrical performance:

i) The single 1557 ACSS trapezoidal conductor proposed in the Preferred Design provides superior voltage control, due to lower reactive power flow on the line, when compared to the double circuit in the Reference Case or the bundled conductor proposed in the IESO's_REP_0748 Alternative Case.

ii) In the Preferred Design, it is possible to bypass the series capacitors under light flow conditions or in circumstances when line flow is below rated capacity to benefit system operation. This results in better voltage control and relieves high voltage stress on installed equipment. In contrast, in the Reference Design, voltage control in circumstances of light load conditions (see Exhibit I-2-2, Diagrams 36 and 38 which show the reactive compensation requirements under flow conditions) will be more complex. The IESO study indicates the system SVC's must absorb additional reactive power in the Reference Design compared to the single circuit alternatives.

**Note:** In the preamble to this question, RES Transmission assumes that the Board intended to refer to the Feasibility Study at Exhibit H-2-3 of its Application, which is the study for RES Transmission's Preferred Design, rather than the "Feasibility Study in Exhibit I – Tab 2 of the RES Submission," as referenced, when making the comparison between the two studies.

## Interrogatory #11

Station layouts in IESO Feasibility Study REP-2 (Tab H-2-3 Figure 2, Figure 3, and Figure 4) had at least three diameters at Wawa, Marathon, and Lakehead. In the RES Preferred Design, ring-bus arrangements (i.e. two diameters) are presented for Wawa, Lakehead, and Marathon (Exhibit G Tab 3 Schedule 1, Exhibit H Tab 4 Schedule 4, and Exhibit H Tab 4 Schedule 5). These ring-bus layouts have weaker post-contingency configurations than those assessed by the IESO. In addition, the RES layouts do not cater for additional shunt elements at Marathon and Lakehead so post-contingency equipment configurations cannot be assessed. Without adopting the station layouts in IESO Feasibility Study REP-2, the corresponding transfer capabilities identified in this study have not been confirmed by the IESO.

Please comment on whether the ring bus layouts presented for the RES Reference and Alternatives will be equivalent or superior to either the Reference or Alternative Options in the IESO Feasibility Study of August 2011.

**Responses:**

RES intended these station layouts to be used for developing cost comparisons for the proposed Reference design and the Preferred Design. These transformer station layouts are consistent with the station layouts provided in the Hydro One Project Definition Report (AR#18379_East-West Tie Expansion). RES intends to work closely with the IESO and Hydro One to meet or exceed any performance requirements.

RES Transmission intends to adopt a station design that provides an equivalent or superior system performance per the IESO feasibility reports. For the Preferred Design (Exhibit H-4-3, H-4-4) and the Reference Design (Exhibit I-4-3, I-4-4), RES Transmission has offered two optional station configurations for each affected station, including the configurations presented by the IESO in its Feasibility Studies. These options were developed to provide cost estimates only. Upon designation RES Transmission is committed to working with the IESO throughout the Development Phase to determine a final design option that meets or exceeds all performance requirements, including station layouts, for consideration in an Application for Leave to Construct before the Board.

The IESO Feasibility Study REP-2 did confirm identified transfer capabilities based on limitations identified following double circuit (adjacent circuits on common structure) contingencies. The station layout diagrams provided in RES Transmission's Application at Exhibits G-3-1, G-3-2, and G-3-3 that compare station layouts for the Preferred Design along with the Reference Design are intended to be used for developing cost comparisons for the proposed Reference design and the Preferred Design.

## Interrogatory #12

In IESO Feasibility Study REP-2 conducted by the IESO for RES, the series compensation was modelled as split equally at both terminal stations. The 40% series compensation for the Wawa-Marathon circuit was modelled with 20% compensation at each of the Wawa and Marathon terminals. The 50% series compensation for the Marathon-Lakehead circuit was modelled with 25% compensation at each of the Marathon and Lakehead terminals. The RES Preferred Design puts all series compensation at Marathon.

Without using the series capacitor arrangement presented in the IESO Feasibility Study REP-2, what evidence supports the statement that the RES Preferred Design is equivalent or superior to either the Reference or Alternative Options in the IESO Feasibility Study of August 2011?

**Responses:**

Although the diagrams for RES Transmission’s Preferred Design appear to indicate all series compensation being placed at Marathon TS, as shown in its Application at Exhibits G-3-2 and H-4-4, these are intended to be indicative representations showing the amount of series compensation on each of the two line segments for the Preferred Design – 40% between Wawa and Marathon and 50% between Marathon and Lakehead – and are not intended to show whether or not the series compensation is split equally between two terminal stations, nor the precise location of the series compensation stations.

At this point, RES Transmission has no preference as to how series compensation is allocated on each line segment, nor has it undertaken development work to identify where series compensation facilities might be located. Upon designation, RES Transmission will work with the IESO throughout the Development Phase to identify the optimal series compensation station layouts, in the event they are required in RES Transmission’s final design, for consideration in an Application for Leave to Construct before the Board.

## Interrogatory #13

Please confirm that RES proposes to receive a return on CWIP during the construction phase, in line with the EB-2009-0152 Report of the Board dated January 15, 2012. Please provide a forecast of the costs to ratepayers on an annual basis to fund a return on CWIP during the construction phase of RES' planned East-West Tie line as compared to the costs to ratepayers under the Board's standard rate setting methodology.

### Responses:

No, RES Transmission does not propose to receive a cash return on CWIP during the construction phase of the Project, as provided in EB-2009-0152.

## Interrogatory #14

In paragraph 38 on page 15 of Exhibit B, Tab 1, Schedule 1 of its designation application, RES states the following:

> The Applicant is also requesting that the OEB vary its usual methodology that prescribes interest rates for approved regulatory accounts (except for Construction Work in Progress ("CWIP" accounts)... The Applicant is requesting that ... the OEB approve a blended debt/equity rate as follows: the sum of the ROE determined by the Board annually, on 40 percent of development expenditures, and the lesser of the deemed short-term debt rate (determined by the Board annually) or the Board-approved "interest during construction" rate, on 60 percent of development expenditures.
>
> The ongoing balance associated with this accrual would be tracked separately on the Applicant's financial statements.

Please provide the incremental cost to ratepayers of the revised interest rate requested by RES.

**Responses:**

RES Transmission estimates the total incremental cost to ratepayers under the requested interest rate for Development Costs to be $521,503, over the life of the Project. This estimate is based on the following assumptions, as set out in its Application at Exhibit B-1-1:

1. An interest rate of 1.47% for approved deferral accounts under the Board's usual methodology based on the rate prescribed by the Board for Q1 2013.

2. A revised interest rate of 4.82%, calculated at the current allowed ROE of 8.93% on 40% of development costs and at the deemed short-term debt rate of 2.08% on 60% of development costs, assuming that the short-term debt is established at a rate of 2.08% or higher.

## Interrogatory #15

In Exhibit P/Tab 5/Schedule 1/pages 7-12 and Exhibit P/Tab 7/Schedule 1, RES proposes an "incentive rate methodology that rewards RES for completing the development and construction of the Project for less than its Bid Amount and penalizes RES for exceeding the bid amount ..."

The methodology described appears to pertain only to the first year (i.e. determination of the initial rate base and the corresponding revenue requirement).

a) Please confirm whether this interpretation is correct.

b) RES' proposal in these exhibits discusses the treatment of prudently incurred cost overages or underages. Is RES proposing that there would be an annual review or other process whereby the Board would review and approve the allowed rate base, underages and overages, and exceptions, and hence the annual revenue requirement?

**Responses:**

a) No, this interpretation is not correct. As described in RES Transmission's Application at Exhibit P-5-1, page 8 of 12, line 20 and page 9 of 12, line 3, the proposed methodology applies "for each year that the EWTL is in service."

b) No, RES Transmission is not proposing an annual review of the allowed rate base. While the incentive/penalty rate structure described by RES Transmission in its Application at Exhibit P-7-1 is applicable throughout the life of the Project, it is intended that budget overages or underages during the Development and Construction Phases of the Project be determined at the time of the first cost-of-service rate application filed after the Project is placed in-service. For each of the subsequent years that the Project is in-service, overages/underages would be amortized for the same depreciable life as plant in service, and revenue requirements would be determined as described in the Application at Exhibit P, Tab 7.

## Interrogatory #16

On page 18 of Exhibit B, Tab 1, Schedule 1 of its designation application, RES proposes "... an incentive rate methodology that rewards RES Transmission for completing the development and construction of the Project for less than its Bid Amount...".

a) Please clarify whether the incentive return on equity of 300 bps sought by RES is pre-tax or post-tax.

b) Please clarify whether the Subtracted Amount is a fixed amount or an amount that amortizes over the approved life of the asset.

c) Please clarify whether any approved overage is a fixed amount or an amount that amortizes over the approved life of the asset.

d) In its worked example Case 2, RES asserts that the incentive scheme provides an "Annual saving to customers" of $0.3 million. Please provide calculations for:

   i) the forecast actual amount payable by ratepayers in the first year if the RES incentive scheme were implemented using the assumptions set out in Case 2;

   ii) the forecast actual amount payable by ratepayers in the first year for the same total actual spend were the line to have been built under the existing cost of service rate making methodology;

   iii) the cost increase/reduction to ratepayers by adopting RES' proposed incentive scheme; and

   iv) a comparison of the value calculated in (iii) above to the $0.3 million "Annual saving to customers" stated in Case 2.

e) in its worked example Case 3, RES asserts that the incentive scheme provides an "Annual saving to customers" of $0.7 million. Please provide calculations for:

   i) the forecast actual amount payable by ratepayers in the first year if the RES incentive scheme were implemented using the assumptions set out in Case 3;

   ii) the forecast actual amount payable by ratepayers in the first year for the same total actual spend were the line to have been built under the existing cost of service rate making methodology;

   iii) the cost increase/reduction to ratepayers by adopting RES' proposed incentive scheme;

iv) a comparison of the value calculated in (iii) above to the $0.7 million "Annual saving to customers" stated in Case 3; and

v) the net present value (NPV) of the cost increase/reduction to ratepayers calculated in (iii) over the lifetime of the asset discounted at the Board approved weighted average cost of capital. Please adjust the NPV calculation to include the incremental cost to ratepayers of CWIP and AFUDC and the appropriate allowances for corporate income tax.

**Responses:**

a) The incentive return on equity sought by RES Transmission is post-tax.

b) The Subtracted Amount would be amortized over the life of the asset.

c) Any approved overage would be amortized over the life of the asset.

d) The attached Appendix 5 provides the calculations that underpin the following amounts in respect of the return on invested capital for the first full year that the Project is in service, under Case 2 assumptions:

i) $25.4 million;

ii) $25.7 million;

iii) annual savings of $0.3 million; and

iv) no difference.

e) The attached Appendix 5 provides the calculations that underpin the following amounts in respect of the return on invested capital for the first full year that the Project is in service, under Case 3 assumptions:

i) $24.1 million;

ii) $23.9 million;

iii) increase of $0.2 million;

iv) increase of $0.2 million, rather than savings of $0.7 million, assuming that the capital cost of the Project is the same in each case; and

v) net present value of the cost increase to ratepayers identified in (iii) above over the lifetime of the asset is $2.04 million. RES Transmission is not seeking a cash return on CWIP and the incentive rate will not apply before the Project is in service, so the costs were not adjusted as neither affects the net present value calculation. While AFUDC will apply to the total cost of construction, RES Transmission will not apply AFUDC effects in the calculation of the Subtracted Amount which will be subject to the incentive under this example. Therefore, the costs were not adjusted for AFUDC because it does not affect the net present value calculation.

# Appendix 1

# MidAmerican Energy Holdings Company

## Full Rating Report

### Ratings

| Security Class | Current Rating |
|---|---|
| Long-Term IDR | BBB+ |
| Short-Term IDR | F2 |
| Senior Unsecured | BBB+ |
| Trust Preferred | BBB– |

IDR – Issuer default rating.

### Rating Outlook

Stable

### Financial Data

**MidAmerican Energy Holdings Company**

| ($ Mil.) | LTM 9/30/11 | 2010 |
|---|---|---|
| Revenues | 11,107 | 11,127 |
| Gross Margins | 7,464 | 7,237 |
| Cash from Operations | 3,396 | 2,759 |
| Operating EBITDA | 3,959 | 3,764 |
| Total Debt | 19,916 | 19,811 |
| Total Capitalization | 33,842 | 33,219 |
| ROE (%) | 10.08 | 9.59 |
| Capex/Depreciation (%) | 201.6 | 205.5 |

### Related Research

PacifiCorp, Nov. 16, 2011

Kern River Funding Corp., Nov. 3, 2011

Fitch Affirms MEHC and Subsidiary Ratings; Outlook Stable, Sept. 29, 2011

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## Key Rating Drivers

**Ratings Affirmed:** On Sept. 29, 2011, Fitch Ratings affirmed MidAmerican Energy Holdings Company's (MEHC) ratings with a Stable Rating Outlook.

**Predictable Utility Cash Flows:** MEHC's ratings and Stable Outlook reflect diversified cash flows primarily from its six relatively low-risk utilities and natural gas pipelines located in the U.S. and U.K. MEHC's utility operations benefit, in Fitch's opinion, from balanced regulation in the large majority of its service territory jurisdictions.

**BRK Affiliation:** MEHC's ratings also consider the positive credit implications of its status as a subsidiary of Berkshire Hathaway Inc. (BRK, issuer default rating [IDR] 'AA–'/Outlook Stable). MEHC has grown through acquisitions, and Fitch believes the company will pursue additional mergers and acquisitions opportunities. A large acquisition would likely be backstopped by BRK capital, in Fitch's opinion.

**Improving Credit Metrics:** MEHC's credit metrics are forecast by Fitch to improve through 2015. Fitch estimates that MEHC's EBITDA coverage ratio will strengthen from 3.1x in 2010 to 3.4x in 2011, and better than 4x in 2015. Similarly, debt to EBITDA is projected by Fitch to strengthen from 5.3x in 2010 to 5.0x in 2011, and 4x in 2015.

## What Could Trigger a Rating Action

**Regulatory Deterioration:** The inability of MEHC's utility subsidiaries to recover capex and incremental operating costs through customer rates could result in future credit downgrades

**Change of Ownership:** A change in ownership structure via sale to another corporate parent with a weaker credit profile would likely lead to negative rating outcomes.

**Event Risk:** BRK's strategy to expand its presence in power and gas markets through MEHC opens the utility holding company to potential event risk.

## Liquidity and Debt Structure

MEHC's liquidity position was strong as of Sept. 30, 2011, with $906 million of cash and cash equivalents on its consolidated balance sheet, and $2.3 billion of available borrowing capacity under $2.8 billion of consolidated revolving credit agreements. In addition, the company's Equity Commitment Agreement (ECA) with BRK, as described below, provides up to $2 billion of equity capital through February 2014.

The majority of MEHC's debt resides at its operating companies. However, MEHC's approximately $5.6 billion of parent-level debt as of Sept. 30, 2011, is significant, representing 31.7% of consolidated long-term debt. MEHC's consolidated debt-to-total capital ratio was 59% and funds from operations to debt was 16.4% as of Sept. 30, 2011, much improved from 2007 levels of 67% and 11.1%, respectively.

### Debt Maturities

MEHC's debt maturities are manageable, in Fitch's view, with approximately $3.2 billion scheduled to mature during 2012–2016. Of the $3.2 billion, $1.2 billion matures later this year, as indicated in the table at right.

**Scheduled Debt Maturities**

($ Mil., Pro Forma As of Sept. 30, 2011)

| Fiscal Year | Amount |
|---|---|
| 2012 | 1,198 |
| 2013 | 652 |
| 2014 | 972 |
| 2015 | 348 |
| 2016 | — |
| **Total** | **3,170** |

Source: Company reports, Fitch analysis.

### Cash Flow and Capex

MEHC's cash flow from operations and capex for the 12-month period ended Sept. 30, 2011, were $3.4 billion and $2.6 billion, respectively. Fitch estimates that MEHC will be FCF negative (after capex) during 2012–2015. MEHC's large projected capex program is driven primarily by investment in infrastructure replacement and upgrade, environmental equipment, demand growth, and wind and solar power expansion. In addition, MEHC is evaluating several transmission projects, which could increase future capex and funding requirements.

### BRK

MEHC's affiliation with its ultimate parent, BRK, provides two unique, specific financial advantages that confer, in Fitch's view, a measure of incremental financial flexibility to MEHC.

First, unlike most utility holding companies, MEHC benefits significantly from capital retained as the direct result of BRK's financial strength, which obviates the need for MEHC to upstream dividends, in turn lowering dividend requirements from its operating subsidiaries.

Second, MEHC and BRK have entered into an ECA, which provides equity capital of up to $2 billion through February 2014, at the request of MEHC. The ECA may be used for the purpose of paying MEHC debt obligations when due, and funding the general corporate purposes and capital requirements of MEHC's regulated subsidiaries. BRK has also provided MEHC an additional $500 million short-term credit facility through June 2012 to support recent renewable energy acquisitions.

MEHC's ratings benefit from the strong financial position of BRK, its ultimate corporate parent, and BRK's strategy to invest in utility assets for the long term.

**Related Criteria**

Corporate Rating Methodology, Aug. 12, 2011

Recovery Ratings and Notching Criteria for Utilities, Aug. 12, 2011

## Structural Protections

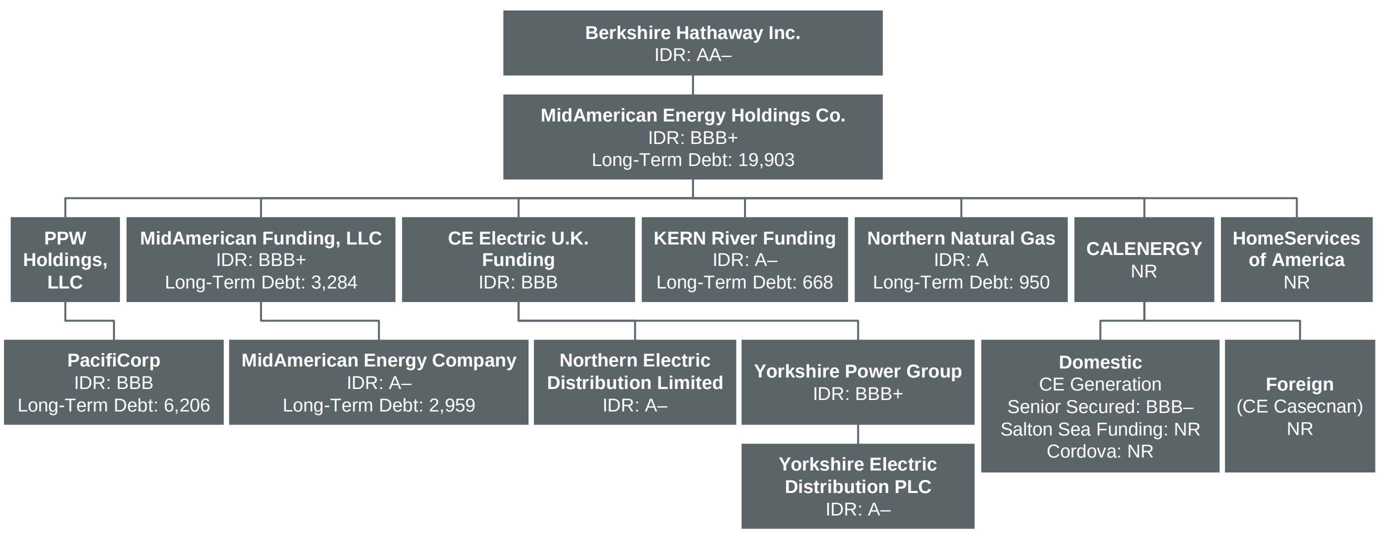
MEHC has implemented policies and procedures, including the creation of special-purpose entities at its operating subsidiaries, designed to insulate them from financial stress at MEHC. Structural protections include nonconsolidation opinions from independent counsel for the company's U.S.-based utility and natural gas pipeline companies. Fitch notes these constructs limit the ability of MEHC's operating utilities and pipelines to upstream cash under certain circumstances.

Among other things, ring-fence provisions include nonrecourse structure; dividend restrictions; a prohibition against the use of credit or the pledging of utility assets for the benefit of any other company; and the maintenance of separate books, financial records, and employees.

While these provisions limit cash flows to MEHC from its utility operating companies, dividends are not proscribed if actual relevant ratios exceed minimum levels, as determined in certain debt agreements or by regulatory restrictions.

### Organizational and Debt Structure

($ Mil., As of Sept. 30, 2011)




IDR – Issuer default rating. NR – Not rated.
Source: Company reports, Fitch Ratings.

## Financial Summary — MidAmerican Energy Holdings Company

| ($ Mil., Fiscal Years Ended Dec. 31) | 2007 | 2008 | 2009 | 2010 | LTM 9/30/11 |
|---|---|---|---|---|---|
| **Fundamental Ratios (x)** | | | | | |
| FFO/Interest Expense | 2.67 | 2.83 | 3.68 | 3.54 | 3.69 |
| CFO/Interest Expense | 2.66 | 2.85 | 3.80 | 3.25 | 3.81 |
| FFO/Debt (%) | 11.10 | 12.05 | 17.15 | 15.70 | 16.37 |
| Operating EBIT/Interest Expense | 2.04 | 2.12 | 1.93 | 2.04 | 2.19 |
| Operating EBITDA/Interest Expense | 2.91 | 2.95 | 2.90 | 3.07 | 3.27 |
| Operating EBITDAR/(Interest Expense + Rent) | 2.91 | 2.95 | 2.90 | 3.07 | 3.27 |
| Debt/Operating EBITDA | 5.16 | 5.14 | 5.38 | 5.26 | 5.03 |
| Common Dividend Payout (%) | — | — | — | — | — |
| Internal Cash/Capital Expenses (%) | 141.31 | 64.57 | 104.66 | 106.40 | 128.49 |
| Capital Expenses/Depreciation (%) | 147.22 | 354.68 | 275.69 | 205.47 | 201.60 |
| **Profitability** | | | | | |
| Adjusted Revenues | 12,376.00 | 12,668.00 | 11,204.00 | 11,127.00 | 11,107.00 |
| Net Revenues | 6,696.00 | 7,498.00 | 7,300.00 | 7,237.00 | 7,464.00 |
| Operating and Maintenance Expense | — | — | — | — | — |
| Operating EBITDA | 3,838.00 | 3,938.00 | 3,703.00 | 3,764.00 | 3,959.00 |
| Depreciation and Amortization Expense | 1,150.00 | 1,110.00 | 1,238.00 | 1,262.00 | 1,311.00 |
| Operating EBIT | 2,688.00 | 2,828.00 | 2,465.00 | 2,502.00 | 2,648.00 |
| Gross Interest Expense | 1,320.00 | 1,333.00 | 1,275.00 | 1,225.00 | 1,209.00 |
| Net Income for Common | 1,189.00 | 1,850.00 | 1,157.00 | 1,238.00 | 1,358.00 |
| Operating Maintenance Expense as % of Net Revenue | — | — | — | — | — |
| Operating EBIT as % of Net Revenues | 40.14 | 37.72 | 33.77 | 34.57 | 35.48 |
| **Cash Flow** | | | | | |
| Cash Flow from Operations | 2,196.00 | 2,460.00 | 3,572.00 | 2,759.00 | 3,396.00 |
| Change in Working Capital | (3.00) | 23.00 | 153.00 | (352.00) | 138.00 |
| Funds from Operations | 2,199.00 | 2,437.00 | 3,419.00 | 3,111.00 | 3,258.00 |
| Dividends | — | — | — | — | — |
| Capital Expenditures | (1,693.00) | (3,937.00) | (3,413.00) | (2,593.00) | (2,643.00) |
| FCF | 503.00 | (1,477.00) | 159.00 | 166.00 | 753.00 |
| Net Other Investment Cash Flow | (1,629.00) | 111.00 | (26.00) | (37.00) | (49.00) |
| Net Change in Debt | 1,735.00 | 992.00 | (600.00) | (93.00) | (231.00) |
| Net Equity Proceeds | 10.00 | — | (123.00) | (56.00) | — |
| **Capital Structure** | | | | | |
| Short-Term Debt | 130.00 | 836.00 | 179.00 | 320.00 | — |
| Long-Term Debt | 19,693.00 | 19,396.00 | 19,752.00 | 19,491.00 | 19,916.00 |
| **Total Debt** | 19,823.00 | 20,232.00 | 19,931.00 | 19,811.00 | 19,916.00 |
| Total Hybrid Equity and Minority Interest | 256.00 | 270.00 | 267.00 | 176.00 | 173.00 |
| Common Equity | 9,326.00 | 10,207.00 | 12,576.00 | 13,232.00 | 13,753.00 |
| **Total Capital** | 29,405.00 | 30,709.00 | 32,774.00 | 33,219.00 | 33,842.00 |
| Total Debt/Total Capital (%) | 67.41 | 65.88 | 60.81 | 59.64 | 58.85 |
| Total Hybrid Equity and Minority Interest/Total Capital (%) | 0.87 | 0.88 | 0.81 | 0.53 | 0.51 |
| Common Equity/Total Capital (%) | 31.72 | 33.24 | 38.37 | 39.83 | 40.64 |

Source: Company reports, Fitch Ratings.

The ratings above were solicited by, or on behalf of, the issuer, and therefore, Fitch has been compensated for the provision of the ratings.

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FitchRatings

# Fitch Affirms MEHC and Subsidiary Ratings; Outlook Stable; NNG Outlook Revised to Negative

Ratings Endorsement Policy
17 Sep 2012 5:08 PM (EDT)

Fitch Ratings-New York-17 September 2012: Fitch Ratings has affirmed MidAmerican Energy Holdings Company's (MEHC) long-term Issuer Default Rating (IDR) at 'BBB+' and its short-term IDR at 'F2'. MEHC's individual security ratings have also been affirmed. The Rating Outlook is Stable.

Fitch has also affirmed all the IDRs and individual security ratings on the following MEHC subsidiaries: MidAmerican Funding, LLC (MF); MidAmerican Energy Company (MEC); PacifiCorp (PPW); Kern River Funding Corporation (KRF); and Northern Natural Gas Company (NNG).

Fitch has revised NNG's Rating Outlook to Negative from Stable. The Outlook on MEHC's other subsidiaries remains Stable.

A complete list of all rating actions is provided at the end of this release.

Approximately $20.4 billion of debt is affected by these rating actions.

NNG's Outlook Revision:

The revision of NNG's Outlook to Negative from Stable reflects Fitch's expectations for debt to EBITDA to remain greater than 2.8x. The weakening of this leverage metric over the past few years has been partly due to the reduction in natural gas prices and narrowing of basis differentials, which has negatively impacted interruptible transportation prices. In addition, the uncertainty resulting from changing North American natural gas supply dynamics has somewhat lessened the competitive stronghold of pipelines such as NNG that are sourced from the more traditional supply basins.

A downgrade of NNG's ratings would likely occur if the company does not decrease its debt to EBITDA metric below 2.5x on a sustainable basis under Fitch's financial projections.

Key Rating Factors:

--The underlying financial strength and relative predictability of MEHC's core U.S.-based electric utility and natural gas pipeline companies and U.K. electric distribution utilities;
--The salutary financial effects of MEHC's affiliation with Berkshire Hathaway Inc. (BRK; IDR 'AA-' with a Stable Outlook);
--Moderately high consolidated debt leverage;
--Regulatory outcomes in pending and future rate case proceedings;
--MEC, PPW, KRF, and NNG have been ring-fenced by special purpose entities to preserve the credit quality of each operating company.

Diversified Stable Businesses:

MEHC's ratings and Stable Outlook reflect the company's stable cash flows from five relatively low-risk regulated utilities and natural gas pipelines located in the U.S. and U.K. The company's U.S. renewable energy operations also provide a good financial return and platform for growth.

The electric and gas utility operations of PPW and MEC are diversified across several states and geographic regions, limiting exposure to any one regulatory jurisdiction or to the effects of extreme weather. NNG's pipeline operations provide essential natural gas supply under long-term contracts to utilities in the Midwest, and Kern River Gas Transmission Company (KRGT; parent of KRF) serves growing areas in Salt Lake City, southern Nevada, and Southern and Central California.

Affiliation with Berkshire Hathaway:

MEHC's ratings also reflect BRK's 90% ownership of the company and its strategic commitment to use MEHC to expand its investments in power and gas assets. Fitch views MEHC's affiliation with BRK as being beneficial to MEHC's credit quality, mitigating concern about MEHC's moderately high consolidated financial leverage and large consolidated capital expenditure program.

BRK has opportunistically provided capital and financing to MEHC to pursue acquisitions, including the PacifiCorp (PPW) acquisition in March 2006 and the attempted Constellation Energy Group (CEG) acquisition in 2008. MEHC's CEG acquisition bid was ultimately rejected, but as a result of the termination of the transaction MEHC received net cash proceeds of approximately $725 million.

Unlike most utility holding companies, MEHC benefits significantly from capital retained as the direct result of BRK's financial strength, which obviates the need to upstream dividends.

In addition, MEHC and BRK have a $2 billion equity commitment agreement (ECA) through February 2014. ECA equity contributions may only be used for the purpose of paying MEHC debt obligations when due and funding the general corporate purposes and capital requirements of MEHC's regulated subsidiaries.

Moderately High Consolidated Debt Leverage:

MEHC's consolidated financial metrics are relatively weak compared to similarly rated companies. For 2011, MEHC's funds flow from operations (FFO) to debt was 16.2% and its debt to EBITDA was 5.1x.

Fitch expects these leverage metrics to remain roughly at these levels through 2013, before improving in 2014 following the conclusion of significant capital expenditure projects at the utilities and recovery of these expenditures through rate case filings. Fitch expects MEHC's FFO to debt to strengthen to around 17% in 2014 and debt to EBITDA to improve to around 4.5x.

Growth in EBITDA and FFO from utility projects along with the current low interest rate environment should result in improvements to interest coverage metrics. Fitch projects EBITDA interest coverage to approach 4x by 2014, from 3.3x at 2011, and FFO interest coverage to also be around 4x in 2014, from 3.7x in 2011.

Good Liquidity:

MEHC's liquidity position is good, with $880 million of cash and cash equivalents on its consolidated balance sheet as of June 30, 2012, and sufficient availability under the revolving credit facilities of the parent and each subsidiary.

In addition, MEHC's equity credit agreement with BRK, as described above, provides up to $2 billion through February 2014. The consolidated company has roughly $2.7 billion of long-term debt scheduled to mature in the years 2013-2015, which Fitch views to be a manageable amount of near-term maturities given the scale and strength of MEHC's consolidated operations.

MF and MEC:

Fitch's affirmation of MF's 'BBB+' long-term IDR and MEC's 'A-' long-term IDR reflects MEC's relatively low business risk profile and solid credit metrics. The ratings also consider the utility's constructive Iowa regulatory environment.

Commodity price risk at MEC is mitigated by the utility's long generating capacity position. However, the combined effects of cyclical downturn and a prolonged recovery and low wholesale power prices and off-system sales have pressured MEC's operating results.

MF is an intermediate holding company that is a wholly owned subsidiary of MEHC and the indirect parent of MEC. MF's ratings are based on the credit quality of MEC, which is the primary source of cash flow to service its debt obligations and also benefits from the support of its ultimate corporate parent, BRK.

PPW:

The affirmation of PPW's 'BBB' long-term IDR considers the company's solid financial position, competitive resource base, and relatively balanced and diversified regulatory environment.

The current ratings and Stable Outlook assume PPW continues to benefit from parent company support and reasonable outcomes in pending and future rate proceedings to recover anticipated, significant capital investment.

Rating concerns for PPW investors include execution and recovery of its capex program. Emergence of more stringent environmental rules and regulations are also a concern.

KRF:

Fitch's affirmation of KRF's 'A-' long-term IDR reflects the pipeline's relatively predictable and strong earnings and cash flow metrics, reasonable regulatory oversight, and manageable capital expenditure plans. KRF is a financing vehicle for the long-term debt obligations of KRGT.

KRF's debt is unconditionally guaranteed by KRGT, which owns and operates a 1,700 mile interstate pipeline delivering primarily Rocky Mountain gas from Wyoming to markets in Utah, Nevada, and California. Customers are under long-term contracts, and the pipeline has access to relatively low-cost natural gas supply and a solid operating track record.

KRF's 'A-' rating reflects KRF/KRGT's standalone credit quality as the result of specific legal and structural separations from its parent, MEHC.

NNG:

The affirmation of NNG's 'A' long-term IDR reflects the pipeline's strong business profile as an essential supplier of natural gas to many Midwest utilities under long-term contracts, favorable operating characteristics, and low regulatory risk. However, NNG's weakened debt leverage metrics, as previously discussed, place strain on the company's credit ratings.

NNG's competitive position is strong, with access to five major supply basins and a customer base primarily comprised of local distribution companies. NNG's competitive pressures are mitigated by the pipeline's stable customer base and geographic location.

Fitch has affirmed the following ratings with a Stable Outlook:

MidAmerican Energy Holdings Company (MEHC)
--Long-term IDR at 'BBB+';
--Senior unsecured debt at 'BBB+';
--Preferred stock at 'BBB-';
--Short-term IDR at 'F2'.

MidAmerican Funding, LLC (MF)
--Long-term IDR at 'BBB+';
--Senior secured debt at 'A-'.

MidAmerican Energy Company (MEC)
--Long-term IDR at 'A-';
--Senior unsecured debt at 'A';
--Preferred stock at 'BBB+';
--Short-term IDR at 'F1';
--Commercial paper at 'F1'.

PacifiCorp (PPW)
--Long-term IDR at 'BBB';
--Senior secured debt at 'A-';
--Senior unsecured debt at 'BBB+';
--Preferred stock at 'BBB-';
--Short-term IDR at 'F2';
--Commercial paper at 'F2'.

Kern River Funding Corporation (KRF)
--Long-term IDR at 'A-';
--Senior unsecured debt at 'A-'.

Fitch has affirmed the following ratings and revised the Outlook to Negative from Stable:

Northern Natural Gas Company (NNG)
--Long-term IDR at 'A';
--Senior unsecured debt at 'A'.

Rating Triggers

MEHC: Given the moderately high debt leverage of the consolidated entity, a positive rating action on MEHC is remote. A negative rating action on MEHC is unlikely, but could occur if FFO to debt were to decrease and be sustained below 16%. In addition, a negative rating action on MEHC would likely occur if there were a meaningful change in the relationship with owner BRK.

MF and MEC: The one-notch separation in long-term IDRs between MF and MEC is due to the extra layer of debt held at MF. If MF were to redeem its parent-level debt, its long-term IDR would likely be upgraded to that of MEC. Otherwise, a positive rating action on MF and MEC is remote, due to the already strong ratings of MEC. A negative rating action on either entity could occur if FFO to debt were to decrease and be sustained below 20%.

PPW: A positive rating action on PPW could occur if FFO to debt were to increase and be sustained near 20%. A negative rating action on PPW could occur if FFO to debt were to decrease and be sustained below 16%.

KRF: A positive rating action on KRF is remote given the company's strong rating, the pipeline's limited scope, and competitive pressures on the system. A negative rating action is also unlikely at this time.

NNG: A positive rating action on NNG is remote, given the aforementioned negative pressures on the credit rating. A ratings downgrade would be likely if NNG's debt to EBITDA is not decreased below 2.5x under Fitch's financial projections.

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Applicable Criteria and Related Research:
--'Corporate Rating Methodology' (Aug. 8, 2012);
--'Parent and Subsidiary Rating Linkage' (Aug. 8, 2012);
--'Recovery Ratings and Notching Criteria for Utilities' (May 3, 2012);
--'Rating North American Utilities, Power, Gas, and Water Companies' (May 16, 2011).

**Applicable Criteria and Related Research:**
Corporate Rating Methodology
Parent and Subsidiary Rating Linkage

Recovery Ratings and Notching Criteria for Utilities
Rating North American Utilities, Power, Gas, and Water Companies

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MOODY'S
INVESTORS SERVICE

# Credit Opinion: MidAmerican Energy Holdings Co.

Global Credit Research - 11 Sep 2012

*Des Moines, Iowa, United States*

## Ratings

| Category | Moody's Rating |
|---|---|
| Outlook | Stable |
| Sr Unsec Bank Credit Facility | Baa1 |
| Senior Unsecured | Baa1 |
| Commercial Paper | P-2 |
| **Parent: Berkshire Hathaway Inc.** | |
| Outlook | Stable |
| Issuer Rating | Aa2 |
| Senior Unsecured | Aa2 |
| ST Issuer Rating | P-1 |
| **Northern Electric plc** | |
| Outlook | Stable |
| Issuer Rating | A3 |
| **Northern Powergrid (Northeast) Limited** | |
| Outlook | Stable |
| Issuer Rating | A3 |

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## Key Indicators

[1]**MidAmerican Energy Holdings Co.**

| | LTM 6/30/2012 | 2011 | 2010 | 2009 |
|---|---|---|---|---|
| (CFO Pre-W/C + Interest) / Interest Expense | 4.3x | 4.0x | 3.7x | 3.7x |
| (CFO Pre-W/C) / Debt | 18% | 17% | 16% | 17% |
| (CFO Pre-W/C - Dividends) / Debt | 18% | 17% | 16% | 17% |
| Debt / Book Capitalization | 49% | 50% | 51% | 53% |

[1] All ratios calculated in accordance with the Global Regulated Electric Utilities Rating Methodology using Moody's standard adjustments.

*Note: For definitions of Moody's most common ratio terms please see the accompanying User's Guide.*

## Opinion

### Rating Drivers

Supportive regulatory environments

Diverse operations

Renewables: a new focus

Credit metrics still lag but improving

BRK: a positive factor but not a ratings driver

## Corporate Profile

MidAmerican Energy Holdings Company (MEHC, Baa1 senior unsecured, stable) is a privately-owned holding company principally engaged in generating, transmitting, storing, distributing and supplying electricity and natural gas. The company owns two electric and gas utilities operating in ten US states (PacifiCorp, Baa1 senior unsecured; MidAmerican Energy Company, A2 senior unsecured); two regulated interstate gas pipeline companies (Northern Natural Gas Company, A2 senior unsecured; Kern River Funding, A3 senior unsecured); two regulated electric distribution networks in the UK (Northern Powergrid (Yorkshire) plc and Northern Powergrid (Northeast) Limited, both A3 senior unsecured); MidAmerican Renewables (not rated), which holds renewables and US independent power projects; CalEnergy Philippines (not rated); and a real estate brokerage firm (HomeServices, not rated). MEHC is a consolidated subsidiary of Berkshire Hathaway Inc. (BRK, Aa2 Issuer Rating, stable).

## SUMMARY RATING RATIONALE

MEHC's Baa1 rating reflects its low business risk and stable cash flow from a well-diversified set of regulated assets. Certain cash flow-based credit metrics are improving but still somewhat weaker than those of other Baa1-rated utility parent companies, but its retained cash flow ratios are stronger, because the company pays no dividends. Although MEHC is rated on a standalone basis, being owned by BRK brings some unique advantages. Paying no dividends has promoted organic improvement in MEHC's capitalization and BRK has provided various financial support, the largest being BRK's $2 billion equity commitment. The MEHC parent company has the capacity to generate excess cash flow, in the near term driven by tax benefits, and in the medium term by cash flows from new businesses currently in development. MEHC's rating also takes into account the structural subordination of the MEHC parent company debt (about 25% of consolidated debt and declining) to the debt of its operating subsidiaries, most of which are rated in the A-Baa range.

## DETAILED RATING CONSIDERATIONS

SUPPORTIVE REGULATORY ENVIRONMENTS

MEHC's regulated subsidiaries (about 95% of consolidated operating income before corporate and other items in 2011) provide MEHC with stable and predictable cash flows. MEHC's two primary US based utilities account for roughly 60% of MEHC's operating income. The companies operate primarily in Iowa, Utah and Oregon, and have fairly supportive relationships with their regulators and benefit from reasonably timely recovery of their costs and investments. MEHC's US pipeline subsidiaries (17% of 2011 operating income) and its UK electric utilities (22% of operating income) are each regulated by national regulatory bodies. Moody's considers these national regulatory frameworks to generally be more supportive of credit quality than US state regulation as the frameworks are very transparent and formulaic and the regulators tend to be less susceptible to local intervention and political pressures.

MEHC's US utility subsidiaries are in the midst of making significant capital investments in generation, transmission and environmental compliance, and these expenditures are expected to remain significant for at least the next few years. As a result, MEHC is expected to continue to need supportive regulatory treatment and periodic rate relief at its utility subsidiaries. The enhanced cost recovery mechanisms currently available in many of MEHC's service regions provide increased assurance of the likelihood of timely recovery of, and the ability to earn a return on, the majority of its significant projects.

DIVERSE OPERATIONS

MEHC operates a globally diverse portfolio of utility businesses located in ten US states, the UK and the Philippines. This diversification across regulatory regimes and business units helps to materially insulate the company from isolated instances of unfavorable regulatory rulings and earnings volatility associated with weather changes, customer growth and regional economic conditions. The company's cash flows have demonstrated a low correlation among one another and mitigate against macroeconomic fluctuations.

MEHC has a balanced fuel mix with an average level of coal generation. As of December 31, 2011, pro forma for three renewable projects closed in the first quarter of 2012 (see below), MEHC's portfolio of over 20,000 MW of generating assets was well diversified across fuel sources and included 47% coal, 24% gas, 17% wind, 6% hydro, 3% solar, 2% nuclear, and 1% geothermal. The concentration of low-cost base-load coal generation currently supports MEHC's competitive market position and limits its rate volatility. MEHC ranks as the largest regulated utility owner of wind generation in the US, after building significant capacity since 2004.

RENEWABLES: A NEW FOCUS

MEHC's established platforms (PacifiCorp, MidAmerican Energy Company, UK, the pipes, and HomeServices) are self-financing and not expected to require capital from MEHC. On the other hand, Renewables, MEHC's newest platform created in 1Q12 following the acquisitions of Topaz Solar Farms (a $2 billion 550MW photovoltaic power plant), Agua Caliente Solar Farm (49% of a $1.8 billion 290MW facility owned by NRG), and Bishop Hill (a $197 million 81MW wind project), will need some capital contributions from the MEHC parent to complete. The timing of these investments was spurred by the upcoming expirations for renewable developments to qualify for certain federal tax credits.

Although these renewable projects have higher business risk than regulated utilities, they have no impact on MEHC's ratings. They are still minor in view of MEHC's large balance sheet (the 3 projects increase non-recourse project debt from $612 million to $2.1 billion, which is 11% of consolidated debt, adjusted for MEHC's proportionate share of debt at its equity investments), and much of the construction costs will be self-financed by the substantial tax credits they generate. The equity contributions that MEHC will make will be small and recovered rapidly.

In addition, Renewables introduces new sources of quasi-regulated cash flow. Each of the 3 projects are underpinned by 25 year purchased power agreements with PG&E (Topaz and Agua Caliente) and Ameren Illinois (Bishop Hill II). Other development projects underway, such as the ETT Texas electric transmission system and Alaska gas storage, will also generate cash flow regulated by state agencies.

Project debt will finance most of the rest of the construction costs not covered by the above-mentioned tax credits. Although legally non-recourse, Moody's will consider these projects as strategic investments, as sources of valuable tax credits in the near-term and some operational cash flow longer term, and consider MEHC's financial profile including and excluding the project debt. Moody's will monitor MEHC's management strategy for any unexpected increase in non-recourse debt and business risk.

CREDIT METRICS STILL LAG BUT IMPROVING

Certain of MEHC's cash flow-based credit metrics still lag those of other Baa1-rated utility parent companies, but they are gradually improving through earnings retention and catching up with its peers. Between 2006 and the last twelve months ended June 2012 (LTM 6/12), MEHC's cash flow from operations before changes in working capital (CFO pre-W/C) rose steadily to $3.9 billion (a $1.7 billion increase, a 78% change) from rate increases, new investments and the deferred tax benefits that they generated. As a result, CFO pre-W/C to Debt has improved from 11.5% in 2006 to 18.3% in LTM 6/12, and CFO pre-W/C interest coverage rose from 2.9x to 4.3x over the same period. Unlike its peers, MEHC pays no dividends, so that its retained cash flow-to-debt ratios are superior.

Of the $3.9 billion in the LTM 6/12 CFO pre-W/C, approximately $765 million of that amount is attributed to bonus depreciation which will expire this year. Excluding bonus depreciation, MEHC's CFO pre-W/C to Debt would have been 15.4%, which is still a material improvement from 2006. The effect of bonus depreciation expiring will be offset by tax credits from renewables, helping to sustain CFO pre-W/C to Debt in the upper teens.

BRK A POSITIVE FACTOR BUT NOT A RATINGS DRIVER

The rating for MEHC takes into account the implicit and explicit support provided by its largest shareholder. BRK has an equity commitment agreement to provide up to $2 billion in equity to MEHC through February 2014. MEHC may request equity either to pay MEHC's debt obligations coming due, or to provide capital to MEHC's existing regulated subsidiaries. Given the stability of MEHC's regulated businesses and their capacity to self-finance, it is unlikely that MEHC would ever need to draw on this equity commitment. Since BRK first provided that equity commitment 6 years ago, MEHC's financial position has sufficiently improved so that the scheduled February 2014 expiration of this equity commitment will have no impact on MEHC's ratings.

The equity commitment agreement is not intended for mergers and acquisitions, but BRK has provided other forms of financing support when MEHC has made large investments. This propensity for periodic large transactions restrains MEHC's ratings.

Notwithstanding the BRK relationship, MEHC and its major platforms are each rated on the standalone basis and are not determined by BRK's ratings. Each platform is discrete, and many are ring-fenced by legal structure and restricted by regulators and bond indentures.

### Notching Considerations

Moody's estimates MEHC's composite cash flows to be of Baa quality, coming from subsidiaries rated from A to Ba. Although MEHC's parent debt is structurally subordinated to some three-quarters of consolidated debt that resides at its subsidiaries, its Baa1 rating is supported by the declining proportion of parent debt (30% of consolidated debt two years ago) and the diversification benefits that come from having multiple cash sources, which puts MEHC at less risk than any one of its assets.

### Liquidity Profile

MEHC has good near-term liquidity. As a holding company, MEHC's primary sources of liquidity are dividends received from its operating subsidiaries and tax deductions from its corporate expenses (mostly interest expense). Over the next twelve to eighteen months in particular, investment and production tax credits generated by its renewable projects, as well as residual bonus depreciation will cause a swell in cash flow at the MEHC parent company. Moody's anticipates that these cash sources will be more than sufficient to cover its overhead, interest expense, and senior debt maturities.

The amount, quality, and diversity of the parent company's cash flows are improving. Over the past few years, the majority of MEHC's dividends received came from its two pipeline subsidiaries and non-US holdings. Going forward, these sources will be supplemented by recent investments coming on-line (in addition to renewables, the ETT Texas electric transmission and Alaska gas storage projects). MEHC's largest utility holdings, PacifiCorp and MidAmerican Energy Company, are also positioned to distribute more regularly, now that PacifiCorp's balance sheet is healthier and MidAmerican Energy Company's wind projects are almost complete.

In September 2012, MEHC parent company is establishing a $1 billion CP program, which will be backstopped by two credit facilities that are sufficient to fully support future CP issuances. MEHC currently has $1,079 million of committed credit facilities. The company will not renew the older $479 million revolver when it expires in July 2013, and it will then be left only with the new $600 million revolver due in 2017. Moody's P-2 rating is based on 100% backup of the CP program, taking into account MEHC's plan to reduce the program size to $600 million when the older facility expires.

The new revolver provides superior CP backup, allowing for same-day borrowings with a swingline loan facility of $50 million. The old facility requires at least a prior day's notice for advances. It is positive that neither credit agreement requires the company to represent the absence of material adverse change or litigation in order to access the facilities, but both do contain a financial covenant that limits consolidated debt-to-capital ratio to 70%. As of June 30, 2012, the parent company was well within compliance with this covenant at 58%, and moreover had $1,047 million available capacity under its facilities. MidAmerican entities tend to keep a significant amount of cash on hand ($305 million at the MEHC parent as of the end of June 2012), which is unusual in the utilities sector.

Events of default under the credit agreements include a payment default by MEHC to its other debt and cross-acceleration to debt of MEHC's material subsidiaries (currently, PacifiCorp and MidAmerican Energy Company) for debt in excess of $50 million in the old facility and in excess of $100 million in the new facility.

The next parent level debt maturity is $500 million of senior notes due on October 1, 2012, which are expected to be retired. The next maturity after that will be in February 2014 when $250 million of notes come due.

As cited previously, the $2 billion equity commitment agreement with BRK furthermore provides a "back door" source of liquidity to MEHC until February 2014.

### Rating Outlook

MEHC's rating outlook is stable, reflecting the company's steady cash flow, the low business risk of its diverse regulated operations, and the current financial strategy under BRK's ownership. The outlook assumes the company sustaining credit metrics at least around current levels, for example, CFO pre-W/C to Debt in the mid to high teens. Longer term, MEHC's ratings anticipate a continued organic improvement in its credit metrics, as well as an occasional large transaction with the assumption that it would be of similar business risk (mostly regulated) and would be financed with sufficient common equity in order to maintain the above-mentioned metrics.

### What Could Change the Rating - Up

MEHC's ratings are unlikely to be upgraded in the foreseeable future given the company's moderate credit metrics, the renewable investments still in development, and its openness to potential large transactions. Longer term, its ratings could be raised if the company demonstrates a sustainable improvement in credit metrics, such as CFO pre-W/C to Debt remaining around 20%.

### What Could Change the Rating - Down

MEHC's ratings could be downgraded if business risk increases materially; major investments are financed with excessive leverage; or credit metrics sustain a decline, for example, CFO pre-W/C to Debt remaining in the low teens for an extended period.

## Rating Factors

**MidAmerican Energy Holdings Co.**

| **Regulated Electric and Gas Utilities Industry** [1][2] | **Current LTM 6/30/12** | | **Moody's 12-18 month Forward View* As of June 2012** | |
|---|---|---|---|---|
| **Factor 1: Regulatory Framework (25%)** | **Measure** | **Score** | **Measure** | **Score** |
| a) Regulatory Framework | | A | | A |
| **Factor 2: Ability To Recover Costs And Earn Returns (25%)** | | | | |
| a) Ability To Recover Costs And Earn Returns | | Baa | | Baa |
| **Factor 3: Diversification (10%)** | | | | |
| a) Market Position (5%) | | Aa | | Aa |
| b) Generation and Fuel Diversity (5%) | | Baa | | Baa |
| **Factor 4: Financial Strength, Liquidity And Key Financial Metrics (40%)** | | | | |
| a) Liquidity (10%) | | A | | A |
| b) CFO pre-WC + Interest/ Interest (7.5%) | 4.3x | Baa | 3.8-4.3x | Baa |
| c) CFO pre-WC / Debt (7.5%) | 18.2% | Baa | 16-19% | Baa |
| d) CFO pre-WC - Dividends / Debt (7.5%) | 18.2% | A | 16-19% | A |
| e) Debt/Capitalization (7.5%) | 49.3% | Baa | 47-50% | Baa |
| **Rating:** | | | | |
| a) Indicated Rating from Grid | | Baa1 | | Baa1 |
| b) Actual Rating Assigned | | Baa1 | | Baa1 |

* THIS REPRESENTS MOODY'S FORWARD VIEW; NOT THE VIEW OF THE ISSUER; AND UNLESS NOTED IN THE TEXT DOES NOT INCORPORATE SIGNIFICANT ACQUISITIONS OR DIVESTITURES

[1] All ratios are calculated using Moody's Standard Adjustments. [2] As of 6/30/12(L); Source: Moody's Financial Metrics

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# MidAmerican Energy Holdings Co.

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# MidAmerican Energy Holdings Co.

## Major Rating Factors

| Corporate Credit Rating |
|---|
| BBB+/Stable/A-2 |

**Strengths:**

- The significant geographical and operational diversity consisting of eight different business platforms that operate mostly in the U.S. and U.K.;
- MidAmerican Energy Holdings Co.'s (MEHC) focus on regulated operations that provide steady operating cash flow;
- Parent Berkshire Hathaway's non-reliance on MEHC to make distributions, providing additional funds for capital spending; and
- Positive free operating cash flow.

**Weaknesses:**

- Berkshire Hathaway capital used to fund acquisitions that may be riskier than MEHC's current businesses;
- To service parent financial obligations, reliant on distributions from a few core subsidiaries; and
- Leverage remains a rating consideration and sizable debt exists at the parent.

## Rationale

Standard & Poor's Ratings Services bases its rating on MidAmerican Energy Holdings Co. (MEHC) on the consolidated credit profile, which includes a business risk profile we consider to be "excellent" and a financial risk profile we consider to be "aggressive". The outlook is stable.

The excellent business risk profile assessment incorporates MEHC's strategy as a geographically and economically diverse utility holding company that owns numerous business platforms consisting almost entirely of regulated utilities operating in the U.K. and nine U.S. regulatory jurisdictions stretching from Iowa to Washington. The remaining platforms include pipelines, power projects, electric transmission joint ventures, and solar power generation plants.

The consolidated financial risk profile, which we consider aggressive, reflects adjusted financial measures from our baseline forecast that are in line with the rating. In addition, we consider the company's financial policies to be aggressive largely due to a high risk appetite of management reflected by high utilization of parent company debt; growth through acquisitions of often much higher risk profile; and investing heavily in solar and wind generation projects, which we consider riskier than traditional utility operations. MEHC's credit measures are favorable relative to its peers in cash flow and capital structure largely due to the regulated nature of operations and significant regulatory and territorial diversity in utility operations. MEHC's EBITDA margin is either about the same or slightly stronger than most of the peers. We believe the company will perform in line with its peers.

Our base forecast of about 17% adjusted funds from operations (FFO) to total debt, 4.7x adjusted debt to EBITDA, and 56% adjusted total debt to total capital continues to reflect ongoing capital spending along with cost recovery through rate cases and rate riders. In our base forecast scenario, after including pro rata debt and interest expense from solar projects and transmission joint ventures, FFO to total debt drops to about 15%, debt to EBITDA rises to 5.2x, and debt



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to capital is modestly higher at 58%. MEHC's rating reflects a mostly regulated utility strategy that includes continuous capital spending and dependence on ongoing and timely cost recovery along with operations in pipelines and power projects, and a growing renewable energy business. We expect this to result in continuing adequate cash flow measures and manageable debt leverage.

## Liquidity

Our short-term rating on MEHC is 'A-2'. Excluding the existing contingent equity agreement available to MEHC, we consider the consolidated liquidity position "adequate" under Standard & Poor's corporate liquidity methodology. We base our liquidity assessment on the following factors and assumptions:

- We expect MEHC's liquidity sources over the next 12 months, including cash on hand, FFO, and credit facilities availability, to exceed uses by 1.2x, which is the minimum threshold for an "adequate" designation. Uses include necessary capital spending, working capital, debt maturities, and shareholder distribution.
- Consolidated debt maturities are manageable over the next 12 months, with about $1.3 billion due in 2013. Debt maturities are manageable through 2016, with $972 million maturing in 2014, $348 million in 2015, and $315 million in 2016.
- We believe liquidity sources would exceed uses even if EBITDA decreased 15%.
- In our assessment, MEHC has good relationships with its banks and has a good standing in the credit markets, having successfully issued debt during the recent credit crisis.

The majority of MEHC's subsidiaries maintain their own liquidity facilities. MEHC also has a $479 million credit facility that matures in July 2013 and a $600 million facility that expires in June 2017. Consolidated capacity is about $3.4 billion, with availability being reduced due to borrowings, commercial paper outstanding, and other support. MEHC's credit facility required the company's ratio of consolidated debt, including current maturities, to total capitalization not to exceed 70% as of the last day of each quarter.

## Recovery analysis

Typically, MEHC's senior unsecured debt would be rated one notch below the corporate credit rating (CCR) because of structural subordination. This results from priority obligations exceeding 20% of total assets absent any goodwill. In the case of MEHC, however, its debt has the same rating as the CCR because the operating subsidiaries are insulated and more highly rated, thereby already subordinating the CCR of parent MEHC.

We rate the operating utilities' senior unsecured debt the same as the corporate credit ratings. Certain senior secured debt at the operating utilities is rated higher than the CCR due to first liens on the respective utility's property.

We assign recovery ratings to first mortgage bonds (FMB) issued by investment-grade U.S. utilities, and this can result in issue ratings that are higher than the CCR on a utility depending on the CCR category and the extent of the collateral coverage. We base our investment-grade FMB recovery methodology on the ample historical record of nearly 100% recovery for secured-bond holders in utility bankruptcies and on our view that the factors that supported those recoveries (the limited size of the creditor class and the durable value of utility-rate-based assets during and after a reorganization, given the essential service provided and the high replacement cost) will persist. Under our notching criteria, we consider the limitations of FMB issuance under the utility's indenture relative to the value of the collateral pledged to bondholders, management's stated intentions on future FMB issuance, and the regulatory limitations on bond issuance. FMB ratings can exceed a CCR on a utility by as much as one notch in the 'A' category, two notches in the 'BBB' category, and three notches in speculative-grade categories.

PacifiCorp's FMBs benefit from a first-priority lien on substantially all of the utility's real property owned or subsequently acquired. Collateral coverage of 1.5x supports a recovery rating of '1+' and an issue rating one notch above the CCR.

## Outlook

Our stable outlook on MEHC reflects our expectation that management will continue to focus on its core utility operations and reach constructive regulatory outcomes to avoid any meaningful rise in business risk. The outlook also takes into account our projection that cash flow measures will decrease as construction projects proceed and the benefits of bonus depreciation recede. Specifically, our base-case forecast includes adjusted FFO to adjusted total debt of about 17%, adjusted debt to adjusted total capital of about 56%, and adjusted debt to adjusted EBITDA of about 4.7x. These ratios exclude any effects from solar projects and transmission joint ventures.

We could lower ratings if financial measures consistently underperform our base forecast and consistently remain at less credit-supportive levels, including adjusted FFO to total debt of less than 14%, adjusted debt to EBITDA that exceeds 5x, and adjusted debt to total capitalization of 60% or more. Our expectation is that over the next two years the company will manage leverage gradually lower. We do not contemplate positive rating actions because of near-term capital needs, but we could raise ratings if financial measures strengthen and consistently exceed our base forecast, including adjusted FFO to total debt of at least 20%, adjusted debt to EBITDA of less than 4x, and adjusted debt to total capital of less than 55%. Acquisition risk remains a consideration and could lead to a ratings change depending on the nature of the target company and the transaction financing.

## Business Description

MEHC is a privately owned (Berkshire Hathaway (BKH; AA+/Stable/A-1+) owns about 90%), diversified energy company that mostly owns fully regulated utilities in the U.S. and the U.K. It also owns interstate natural gas pipelines and various energy projects, including solar and wind generation. The numerous business platforms, along with the percentage contribution to 2011 consolidated operating income (does not equal 100% due to corporate/other of negative 2%), are as follows:

- PacifiCorp (41% of 2011 consolidated operating income) is a vertically integrated electric utility providing electricity to 1.7 million retail customers in Utah (43% of PacifiCorp's annual sales), Wyoming (18%), and Idaho (6%) as Rocky Mountain Power and in Oregon (24%), Washington (7%), and California (2%) as Pacific Power.
- MidAmerican Energy Funding LLC (16%) is an intermediate holding company that largely consists of MidAmerican Energy Co., which is a vertically integrated electric utility with 90% of its retail electric sales in Iowa and a regulated natural-gas distribution utility that has about 75% of retail natural gas business in Iowa, 15% in South Dakota, and 10% in Illinois.
- MidAmerican Energy Pipeline Group (17%) consists of two interstate natural gas transmission pipelines, Northern Natural Gas and Kern River Gas Transportation.
- Northern Natural Gas is a 14,900-mile pipeline with a highly contracted transportation and storage revenue base

that runs from the Permian Basin in West Texas through seven states in the upper Midwest. It is the largest pipeline in the U.S. as measured in miles and the 12th largest based on throughput. Key urban markets served include Minneapolis/St. Paul, Omaha, Milwaukee, Des Moines, and Chicago. Because NNG is an interstate pipeline, the Federal Energy Regulatory Commission (FERC) regulates its rates and services.

- Kern River is a 1,700-mile FERC-regulated interstate pipeline that moves gas from the Rocky Mountains through Utah (including Salt Lake City), Nevada (near Las Vegas), and a portion of Arizona before terminating in southern California.
- Northern Powergrid Holdings Co. (23%) is a U.K.-based distribution network operator that distributes electricity through its grid to 3.8 million end users in northern England.
- MidAmerican Renewables LLC (4%) owns various renewable electricity generation assets, including Topaz Solar Farms LLC, which is constructing a solar project in southern California; a 49% equity interest in Agua Caliente Solar, LLC, which owns a 290 megawatt (MW) solar project in Arizona, and wind generation investments.
- HomeServices (1%) is a residential brokerage firm.
- Transmission Joint Ventures (not meaningful) has 50% equity interests in Electric Transmission Texas LLC and Electric Transmission American LLC.

## Rating Methodology

MEHC, the parent company, is rated below many of its subsidiaries because there are constraints on receiving cash flows from them to service parent obligations. Subsidiary ratings may be higher than the parent's rating, with the provision under our criteria that there is a limit to the level of separation we are comfortable with from the parent's rating. Our criteria indicate that properly ring-fenced projects may be afforded up to a full rating category above the parent's issuer credit rating if the financial and business risk profiles at the subsidiary level support a higher rating. It has been determined that owned projects have met our ring-fencing criteria and subsidiaries like MEC, PacifiCorp, and NNG have regulatory insulation, stand-alone credit measures, and business profile risks that support higher ratings.

## Business Risk Profile: Excellent; Largely Regulated Operations And Growing Renewable Appetite

We consider MEHC's business risk profile excellent, reflecting operations as a sole provider in its service territories of essential services, electricity, and natural gas distribution that remain regulated. This provides a measure of support and insulation from market challenges. With operations across eight states, MEHC benefits significantly from regional, geographical, and regulatory diversity, potentially minimizing the effect of economic conditions in one particular state or adverse regulatory decisions. The customer base for the regulated utilities (both electric and gas) is primarily residential and commercial customers in terms of both revenues and sales, which provides stable cash flows. The diversity in markets and regulation strengthens credit quality, but the numerous regulatory jurisdictions require diligent filing for rate recovery. The company has a low-cost and diversified generation portfolio and, on average, credit-supportive regulation in the U.S.

The excellent business risk profile also incorporates the low risk wires-only distribution utilities that have credit-supportive U.K. regulation and no commodity risk because nonaffiliated retail suppliers procure electricity for retail customers. Along with the stability of the U.K. cash flows, the consolidated excellent business risk profile is bolstered with the low risk nature of the interstate pipeline operations that reflect NNG's deep and broad reach into major markets in the upper Midwest; the small number of alternative suppliers available to its key customers; and a highly contracted transportation and storage revenue base that mostly consists of investment-grade customers. Our view is that the essential nature of NNG's embedded gas transmission system in the Midwest will lead shippers to renew contracts for firm transport services as their existing contracts expire. The combination of all these cash flows, which result in almost all of MEHC's consolidated operating income, more than offset the riskier renewable energy and power projects. Investments under MidAmerican Renewables will slightly less than double the 1,055 MW of project-financed power plant capacity that MEHC owns through domestic and foreign holdings of CalEnergy Generation LLC. We believe that by 2015 project-financed assets in total will generate less than 10% of consolidated MEHC EBITDA. However, we would revisit the consolidated business risk profile if MEHC's project and unregulated energy exposure contributed more than 15% of consolidated EBITDA.

### Management and strategy

MEHC's current business mix of 85% to 90% regulated operations and 10% to 15% nonregulated operations is comparable to peers, but MEHC's operations are more diversified than peers. MEHC's strategy is aggressive since its policies are influenced to a large extent by parent BKH. MEHC has expanded through several acquisitions, mostly in the regulated low risk domain. However, the company's risk appetite is high, keeping in mind, its bid to acquire Constellation Energy Group Inc. in 2008 and its equity investment in BYD Co. Ltd. (a Chinese rechargeable battery company that MEHC acquired in 2009). Future acquisitions may not be credit neutral for MEHC and will depend on the target's business risk and the amount debt used to finance the transaction.

### S&P base case operating expectations

Standard & Poor's base case scenario for MEHC indicates:

- The company remains a holding company that owns a diversified portfolio of businesses that consists almost entirely of fully regulated electric utilities and natural gas distribution operations.
- Non-regulated operations do not grow to a level that would result in a business risk profile change.
- Customer usage will remain flat or slightly increase.
- The customer base is roughly equally divided among residential, commercial and industrial, which provides customer diversity and at least a base level of usage. There is some industrial sales exposure for MEC.
- The utilities have efficient electricity generating operations that produce competitively priced power, high levels of plant utilization, a low level of unforced outages, and high reliability. In addition, the gas distribution operations are viewed as having low operating risk.
- Utility subsidiaries operate under regulatory terms that largely support credit quality and are generally constructive, which includes good fuel-clause mechanisms and other cost pass-through mechanisms.
- There is effective management of regulatory relationships.
- MEC and PacifiCorp continue spending on new generation and pollution-control equipment while seeking higher operating cash flow through various rate riders and base rate proceedings.
- MEHC continues to spend on pipeline projects.

**Table 1**

**MidAmerican Energy Holdings Co. -- Peer Comparison**

**Industry Sector: Energy**

| | MidAmerican Energy Holdings Co. | American Electric Power Co. Inc. | Xcel Energy Inc. | PPL Corp. |
|---|---|---|---|---|
| Rating as of Oct. 25, 2012 | BBB+/Stable/A-2 | BBB/Stable/A-2 | A-/Stable/A-2 | BBB/Stable/NR |
| | --Average of past three fiscal years-- | | | |
| **(Mil. $)** | | | | |
| Revenues | 11,168.0 | 14,093.5 | 10,202.8 | 8,268.7 |
| EBITDA | 3,962.5 | 4,421.1 | 2,689.8 | 2,440.8 |
| Net income from continuing operations | 1,242.0 | 1,383.0 | 759.6 | 826.1 |
| Funds from operations (FFO) | 3,514.6 | 3,518.1 | 2,226.2 | 2,311.4 |
| Capital expenditures | 2,919.5 | 2,797.7 | 2,085.3 | 1,569.9 |
| Free operating cash flow | 434.2 | 576.7 | 168.7 | 799.4 |
| Discretionary cash flow | 358.5 | (265.1) | (285.1) | 138.0 |
| Cash and short-term investments | 412.0 | 692.7 | 124.1 | 872.4 |
| Debt | 21,400.4 | 20,671.1 | 11,330.0 | 12,490.0 |
| Equity | 13,168.5 | 13,986.7 | 8,184.6 | 8,659.1 |
| **Adjusted ratios** | | | | |
| EBITDA margin (%) | 35.5 | 31.4 | 26.4 | 29.5 |
| EBITDA interest coverage (x) | 3.1 | 3.8 | 4.2 | 4.3 |
| EBIT interest coverage (x) | 2.2 | 2.8 | 2.9 | 3.2 |
| Return on capital (%) | 7.1 | 7.8 | 8.1 | 9.6 |
| FFO/debt (%) | 16.4 | 17.0 | 19.6 | 18.5 |
| Free operating cash flow/debt (%) | 2.0 | 2.8 | 1.5 | 6.4 |
| Debt/EBITDA (x) | 5.4 | 4.7 | 4.2 | 5.1 |
| Total debt/debt plus equity (%) | 61.9 | 59.6 | 58.1 | 59.1 |

## Financial Risk Profile: Aggressive, Substantial Leverage And Steady Cash Flow

Our assessment of MEHC's financial risk profile as aggressive is based on its consolidated financial measures, which include adjusted financial measures that are mostly in line with the rating. For the 12 months ended June 30, 2012, adjusted FFO to total debt was 17.7%. Debt leverage was aggressive as demonstrated by adjusted total debt to total capital of 60%, whereas adjusted debt to EBITDA exceeded the 4x to 5x range for an aggressive profile. Adjusted net cash flow (FFO less dividends) to capital spending was 125% and, after reducing cash flow from operations with capital spending and dividends, adjusted discretionary cash flow was a positive $900 million. These measures indicate that the company can internally fund all its capital spending and owner distributions. Adjusted FFO interest coverage was adequate at 4.1x, and the company's adjusted dividend payout ratio was much lower than the industry average, helping to boost the internally generated cash flow availability for capital spending.

**Table 2**

| MidAmerican Energy Holdings Co. -- Financial Summary | | | | | |
|---|---|---|---|---|---|
| **Industry sector: energy** | | | | | |
| | **--Fiscal year ended Dec. 31--** | | | | |
| | **2011** | **2010** | **2009** | **2008** | **2007** |
| Rating history | BBB+/Stable/-- | BBB+/Stable/-- | BBB+/Stable/-- | A-/Watch Neg/-- | A-/Stable/-- |
| **(Mil. $)** | | | | | |
| Revenues | 11,173.0 | 11,127.0 | 11,204.0 | 12,668.0 | 12,376.0 |
| EBITDA | 4,108.5 | 3,865.9 | 3,913.3 | 4,038.2 | 3,987.1 |
| Operating income | 2,779.5 | 2,603.9 | 2,552.3 | 2,928.2 | 2,837.1 |
| Net income from continuing operations | 1,331.0 | 1,238.0 | 1,157.0 | 1,850.0 | 1,189.0 |
| Funds from operations (FFO) | 3,616.3 | 3,405.8 | 3,521.8 | 2,804.0 | 2,571.5 |
| Capital expenditures | 2,757.4 | 2,560.1 | 3,440.8 | 3,978.5 | 3,523.0 |
| Free operating cash flow | 609.9 | 377.7 | 314.9 | (1,151.5) | (954.4) |
| Dividends paid | 37.0 | 121.0 | 69.0 | 123.0 | 122.0 |
| Discretionary cash flow | 572.9 | 256.7 | 245.9 | (1,274.5) | (1,076.4) |
| Debt | 21,612.3 | 21,231.0 | 21,358.0 | 20,999.0 | 20,029.3 |
| Preferred stock | 22.0 | 240.0 | 471.5 | 1,204.0 | 973.0 |
| Equity | 14,145.0 | 13,087.0 | 12,273.5 | 11,681.0 | 10,555.0 |
| Debt and equity | 35,757.3 | 34,318.0 | 33,631.5 | 32,680.0 | 30,584.3 |
| **Adjusted ratios** | | | | | |
| EBITDA margin (%) | 36.8 | 34.7 | 34.9 | 31.9 | 32.2 |
| EBIT interest coverage (x) | 2.4 | 2.2 | 2.1 | 2.4 | 2.4 |
| FFO interest coverage (x) | 3.8 | 3.6 | 3.6 | 3.0 | 2.9 |
| FFO/debt (%) | 16.7 | 16.0 | 16.5 | 13.4 | 12.8 |
| Discretionary cash flow/debt (%) | 2.7 | 1.2 | 1.2 | (6.1) | (5.4) |
| Net cash flow /Capex (%) | 129.8 | 128.3 | 100.3 | 67.4 | 69.5 |
| Debt/EBITDA (x) | 5.3 | 5.5 | 5.5 | 5.2 | 5.0 |
| Debt/debt and equity (%) | 60.4 | 61.9 | 63.5 | 64.3 | 65.5 |
| Return on capital (%) | 7.0 | 7.0 | 7.3 | 8.9 | 9.5 |
| Return on common equity (%) | 8.8 | 8.3 | 9.1 | 17.6 | 12.1 |
| Common dividend payout ratio (unadjusted) (%) | 0 | 0 | 0 | 0 | 0 |

## S&P base case cash flow and capital structure expectations

Our base case forecast suggests mostly steady key credit measures over the next several years. Specifically, our base-case forecast includes adjusted FFO to adjusted total debt of about 17%, adjusted debt to adjusted total capital of about 56%, and adjusted debt to adjusted EBITDA of about 4.7x. These ratios exclude any effects from solar projects and transmission joint ventures. We expect net cash flow to capital spending to exceed 100% and discretionary cash flow to remain positive over the next several years, helping to fund growth capital expenditures. We project that FFO interest coverage will hover at about 4x. We derive the base case forecast financial measures from our assumptions, including:

- Over next several years, capital spending trends lower as construction of solar and wind projects recede.

- EBITDA growth consisting of revenue increases and customer growth expected to be about the same as in recent years.
- Wholesale power prices remain lower for next few years, resulting in lower sales margins.
- Refinancing of upcoming debt maturities.
- Dividend payout ratio similar to current levels.
- Maintenance of liquidity assessment we believe to be adequate.
- Maintenance of financial policies we consider to be aggressive.
- Continuing commitment to credit quality.

Standard & Poor's adjusts ratios to account for operating leases, pension-related items, and a risk-based share of certain power-purchase agreement obligations.

**Table 3**

Reconciliation Of MidAmerican Energy Holdings Co. Reported Amounts With Standard & Poor's Adjusted Amounts (Mil. $)

| | --Fiscal year ended Dec. 31, 2011-- | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **MidAmerican Energy Holdings Co. reported amounts** | | | | | | | | | | |
| | Debt | Shareholders' equity | Revenues | EBITDA | Operating income | Interest expense | Cash flow from operations | Cash flow from operations | Dividends paid | Capital expenditures |
| Reported | 19,937.0 | 14,265.0 | 11,173.0 | 4,013.0 | 2,684.0 | 1,156.0 | 3,220.0 | 3,220.0 | 24.0 | 2,684.0 |
| **Standard & Poor's adjustments** | | | | | | | | | | |
| Operating leases | 440.6 | -- | -- | 24.9 | 24.9 | 24.9 | 60.6 | 60.6 | -- | 113.4 |
| Equity-like hybrids | (22.0) | 22.0 | -- | -- | -- | (13.0) | 13.0 | 13.0 | 13.0 | -- |
| Postretirement benefit obligations | 516.1 | -- | -- | 32.0 | 32.0 | -- | 141.7 | 141.7 | -- | -- |
| Capitalized interest | -- | -- | -- | -- | -- | 40.0 | (40.0) | (40.0) | -- | (40.0) |
| Power purchase agreements | 258.5 | -- | -- | 15.6 | 15.6 | 15.6 | -- | -- | -- | -- |
| Asset retirement obligations | 156.0 | -- | -- | 23.0 | 23.0 | 23.0 | (28.0) | (28.0) | -- | -- |
| Reclassification of nonoperating income (expenses) | -- | -- | -- | -- | 158.0 | -- | -- | -- | -- | -- |
| Reclassification of working-capital cash flow changes | -- | -- | -- | -- | -- | -- | -- | 249.0 | -- | -- |
| Debt--accrued interest not included in reported debt | 326.0 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Equity --other | -- | (142.0) | -- | -- | -- | -- | -- | -- | -- | -- |

**Table 3**

| Reconciliation Of MidAmerican Energy Holdings Co. Reported Amounts With Standard & Poor's Adjusted Amounts (Mil. $) (cont.) | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Total adjustments | 1,675.3 | (120.0) | 0.0 | 95.5 | 253.5 | 90.5 | 147.3 | 396.3 | 13.0 | 73.4 |

**Standard & Poor's adjusted amounts**

| | Debt | Equity | Revenues | EBITDA | EBIT | Interest expense | Cash flow from operations | Funds from operations | Dividends paid | Capital expenditures |
|---|---|---|---|---|---|---|---|---|---|---|
| Adjusted | 21,612.3 | 14,145.0 | 11,173.0 | 4,108.5 | 2,937.5 | 1,246.5 | 3,367.3 | 3,616.3 | 37.0 | 2,757.4 |

## Related Criteria And Research

- Methodology And Assumptions: Liquidity Descriptors For Global Corporate Issuers, Sept. 28, 2011
- Criteria Methodology: Business Risk/Financial Risk Matrix Expanded, May 27, 2009
- 2008 Corporate Ratings Criteria: Analytical Methodology, April 15, 2008
- Criteria: Changes To Collateral Requirements For '1+' Recovery Ratings On U.S. Utility First Mortgage Bonds, Sept. 6, 2007

| Ratings Detail (As Of October 26, 2012) | |
|---|---|
| **MidAmerican Energy Holdings Co.** | |
| Corporate Credit Rating | BBB+/Stable/A-2 |
| Commercial Paper | |
| *Local Currency* | A-2 |
| Senior Unsecured | BBB+ |
| **Corporate Credit Ratings History** | |
| 06-Sep-2012 | BBB+/Stable/A-2 |
| 27-Mar-2009 | BBB+/Stable/-- |
| 18-Sep-2008 | A-/Watch Neg/-- |
| **Business Risk Profile** | Excellent |
| **Financial Risk Profile** | Aggressive |
| **Related Entities** | |
| **CE Generation LLC** | |
| Senior Secured | BB+/Negative |
| **Cordova Energy Co. LLC** | |
| Senior Secured | BB/Stable |
| **Iowa-Illinois Gas & Electric Co.** | |
| Senior Unsecured | A-/A-2 |
| **Kern River Gas Transmission Co.** | |
| Senior Secured | A-/Stable |
| **MidAmerican Energy Co.** | |
| Issuer Credit Rating | A-/Stable/A-2 |
| Preferred Stock | BBB+ |
| Senior Unsecured | A- |
| Senior Unsecured | A-/A-2 |

| Ratings Detail (As Of October 26, 2012) (cont.) | |
|---|---|
| **MidAmerican Funding LLC** | |
| Senior Secured | BBB+ |
| **Midwest Power Systems Inc.** | |
| Senior Unsecured | A-/A-2 |
| **Northern Electric Finance PLC** | |
| Senior Unsecured | A- |
| **Northern Electric PLC** | |
| Issuer Credit Rating | BBB+/Stable/A-2 |
| Senior Unsecured | A- |
| **Northern Natural Gas Co.** | |
| Issuer Credit Rating | A/Negative/-- |
| Senior Unsecured | A |
| **Northern Powergrid Holdings Co.** | |
| Issuer Credit Rating | BBB+/Stable/A-2 |
| Senior Unsecured | BBB+ |
| **Northern Powergrid (Northeast) Ltd.** | |
| Issuer Credit Rating | A-/Stable/-- |
| Senior Unsecured | A- |
| **Northern Powergrid (Yorkshire) PLC** | |
| Issuer Credit Rating | A-/Stable/A-2 |
| Senior Unsecured | A- |
| **PacifiCorp** | |
| Issuer Credit Rating | A-/Stable/A-2 |
| Commercial Paper | |
| *Local Currency* | A-2 |
| Preferred Stock | BBB |
| Senior Secured | A |
| **Salton Sea Funding Corp.** | |
| Senior Secured | BBB-/Stable |
| **Topaz Solar Farms LLC** | |
| Senior Secured | BBB-/Stable |
| **Yorkshire Electricity Group PLC** | |
| Issuer Credit Rating | BBB+/Stable/-- |
| **Yorkshire Power Group Ltd.** | |
| Issuer Credit Rating | BBB+/Stable/A-2 |
| Senior Unsecured | BBB+ |

*Unless otherwise noted, all ratings in this report are global scale ratings. Standard & Poor's credit ratings on the global scale are comparable across countries. Standard & Poor's credit ratings on a national scale are relative to obligors or obligations within that specific country.

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McGRAW-HILL

# Appendix 2

# Berkshire Hathaway Inc.

## And Insurance Subsidiaries
### Full Rating Report

### Ratings

| Security Class | Rating |
|---|---|
| Long-Term Issuer Default | AA– |
| Senior Unsecured Debt | A+ |
| Commercial Paper | F1+ |

**Insurance Subsidiaries**

| | |
|---|---|
| Insurer Financial Strength | AA+ |

Note: See additional ratings in Appendix C.

### Rating Outlook

Stable

### Financial Data

**Berkshire Hathaway Inc.**

| ($ Mil.) | 12/31/11 |
|---|---|
| Net Income | 10,254 |
| Stockholders' Equity | 164,850 |
| Debt and Hybrids | 60,384 |
| ROE (%) | 6.4 |

Note: GAAP.
Source: BRK 10-K.

### Related Research

2012 Outlook: Property/Casualty Insurance, Dec. 14, 2011

2011–2012 Global Reinsurance Review and Outlook, Sept. 2, 2011

Fitch Affirms Berkshire Hathaway's IDR at 'AA–', April 23, 2012

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## Key Rating Drivers

**Strong Capital Profile:** Berkshire Hathaway Inc.'s (BRK) capitalization is a strength for the company on an insurance operating basis, with a consolidated statutory surplus of $95 billion and very low operating leverage. Holding company financial leverage as measured by debt to total capital is 17%.

**Superior Growth in Book Value:** Book value growth is derived from several sources: insurance underwriting profits, an investment focus on common stocks, and earnings from 69 distinct non-insurance operations. BRK's book value per share over management's 47-year term has grown by an annual compound rate of nearly 20%, relative to a 9.2% rate for the S&P 500 Index with dividends included.

**Solid Performance from Insurance Subsidiaries:** BRK has a unique insurance franchise with major positions in reinsurance and personal auto lines and a history of sizeable underwriting profits. From 2007–2011, BRK's underwriting combined ratio for consolidated insurance operations averaged 93.1%.

**Excellent Financial Flexibility and Liquidity:** Fitch Ratings views BRK's liquidity and financial flexibility as very strong, characterized by consistently solid operating cash flow, a large and liquid investment portfolio, a history of maintaining large consolidated cash balances, and excellent capital market access.

**Material Risk Exposures:** BRK's $77 billion common stock investment holdings and $34 billion notional value in equity index put options represent greater exposure to equity market movements than that of peers. Layered on top of investment risk is exposure to catastrophe losses, risks related to the company's acquisition strategy, and key man risk with CEO Warren Buffett.

## What Could Trigger a Rating Action

**Deterioration in Key Insurance Subsidiaries:** A decline in the credit quality of key insurance subsidiaries below the current 'AA+' rating measured by a total financing and commitments (TFC) ratio greater than 1.5x or net leverage (excluding affiliated investments) greater than 3.5x could lead to a downgrade.

**Change in Leverage:** A run-rate debt-to-tangible capital ratio from the holding company and insurance and finance debt guaranteed by the holding company greater than 30% could lead to a downgrade.

**Reduced Holding Company Cash:** Acquisitions or other actions that reduce consolidated cash holdings below $10 billion or approximately 5.0x consolidated interest expense could lead to a downgrade.

**Increased Leveraged Equity Exposure:** Adding equity index put derivative contract notional amounts materially beyond the recent outstanding $34 billion could lead to a downgrade.

## Market Position and Size/Scale

### Major Market Position and Size

- Top 20 global insurer ranked by assets and premiums.
- GEICO ranked third in personal auto.

Fitch believes that each of BRK's insurance subsidiaries has strong and sustainable competitive positions within each of its distinct target markets. GEICO targets individual cost-conscious consumers throughout the U.S. who are comfortable purchasing products over the phone or Internet. General Reinsurance Corp. (GenRe) and Berkshire Hathaway Reinsurance Group (BHRG) target a variety of primary insurance companies worldwide.

### Top 20 Insurer Ranked by Assets and Premiums

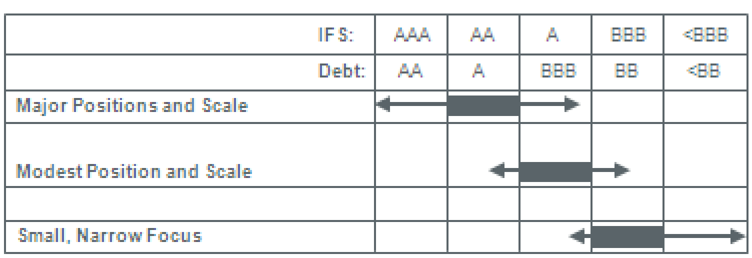
BRK's insurance operations, consisting of key subsidiaries GenRe, National Indemnity Co. (NICO), and GEICO, rank in the world's top 20 largest insurers measured both by assets and premiums.

GenRe markets excess of loss (XOL) reinsurance and facultative reinsurance in North America. Outside North America, GenRe markets treaty and facultative reinsurance through its Germany-based subsidiary, General Reinsurance AG, and other wholly-owned affiliates. BHRG, primarily written through NICO and Columbia Insurance Co., markets XOL and quota-share reinsurance. BHRG's products include XOL property catastrophe treaty reinsurance and excess direct and facultative reinsurance written on discrete individual risks including terrorism, natural catastrophe, and aviation risks. BHRG derives a significant portion of its business from retroactive reinsurance contracts.

### GEICO Ranked Third in Personal Auto

GEICO markets auto insurance products nationwide on a direct basis. Fitch generally views auto insurance as a comparatively low risk product due to its short reserve duration, low policy limits, and limited catastrophe exposure. GEICO's direct distribution model differentiates the company from its competition, providing the company with an expense advantage, and thus is significantly positive from a rating and credit perspective.

Ratings Range Based on Market Position and Size/Scale




**Related Criteria**

Insurance Rating Methodology, Sept. 22, 2011

### *Corporate Governance and Management*

Corporate governance and management are adequate and neutral to the rating.

Fitch believes that BRK's board of directors is probably more influenced by management than most boards because of CEO Warren Buffett's presence. However, Fitch also believes that Mr. Buffett's large ownership interest has prevented the board from improperly favoring management over their fiduciary responsibility to shareholders.

The board of directors consists of eight independent, two management (Mr. Buffett and Charlie Munger), and two nonmanagement but non-independent members (Howard Buffett, who is Warren Buffett's son, and Ron Olson, who is a partner at Mr. Munger's law firm).

Compensation structure at BRK is heavily weighted toward equity ownership. The compensation of only three employees at the holding company level is disclosed: Warren Buffett, Mr. Munger, and CFO Marc Hamberg.

Audit opinions are clean, and related-party transactions are disclosed.

At the end of March 2011, Dave Sokol, chairman of several BRK subsidiaries and potential successor to Warren Buffett, resigned from the firm. Mr. Sokol had personal holdings in Lubrizol, purchased a few months before BRK's announced acquisition of the company. While BRK denied that Mr. Sokol's resignation was tied to his Lubrizol investment, it was a blemish on BRK's corporate governance practices.

## Berkshire Hathaway Is a Conglomerate

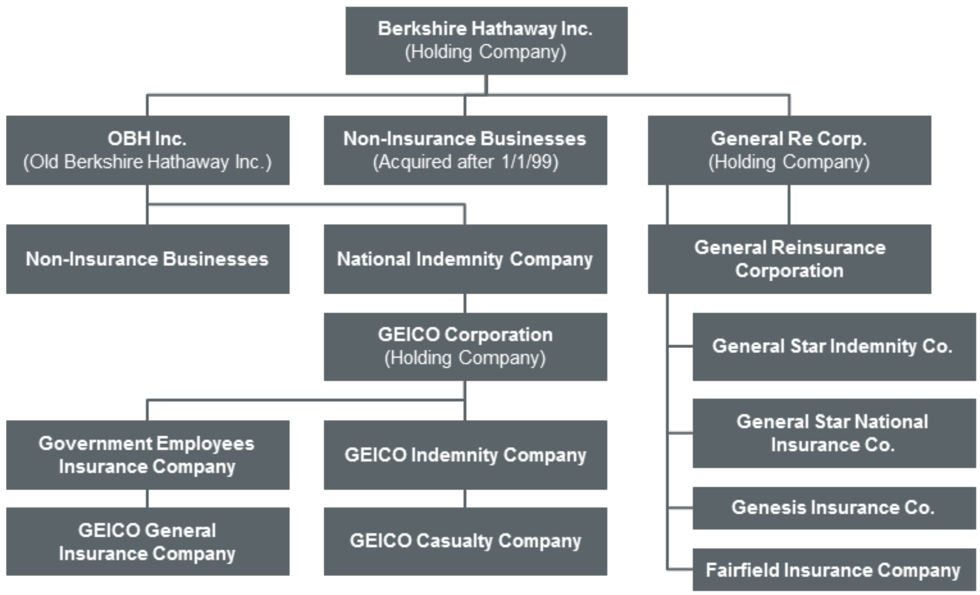
BRK strives to invest in companies with strong management teams that it believes have the ability to build intrinsic economic value over the long term. Fitch believes that BRK places more emphasis on long-term underlying economic results and less emphasis on periodic accounting results compared with many publicly traded companies.

BRK has an outstanding record of success making investments in a wide variety of industries, which Fitch attributes to the talents of Warren Buffett, the company's chairman and CEO since 1970. Fitch believes that BRK is managed as a holding company where subsidiaries develop their business and operational strategies while the holding company controls capital allocation, acquisition, and investment strategies.

## Ownership Benefits Ratings

BRK is a publicly traded diversified holding company that had a market capitalization of $203 billion on May 11, 2012. Through 2011, the company generated $144 billion of revenues, and its shareholders' equity totaled $180 billion on March 31, 2012. Fitch views BRK's diverse sources of earnings and cash flows as a key credit strength.

**Simplified Organizational Chart**




Source: SEC filings.

## Industry Profile and Operating Environment

A majority of U.S. life and nonlife (re)insurers in Fitch's rating universe have insurer financial strength (IFS) ratings in the 'AA' and 'A' categories.

## Non-life Industry Has Relatively Low Risk Profile

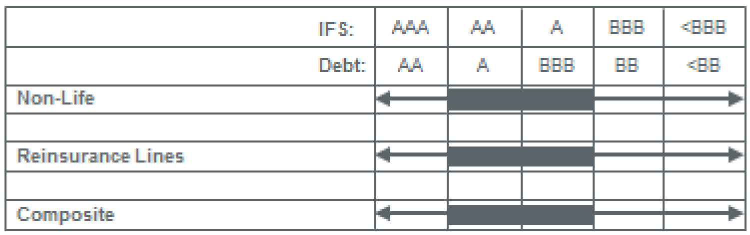
Key non-life industry risk factors include cyclical pricing, intense market competition, pricing and reserving uncertainty, investment risk tied to fixed-income and equity holdings, catastrophe loss exposures, and regulatory issues. The industry withstood the 2008–2009 financial crisis

### *Sovereign and Country Related Constraints*

Fitch rates the local currency sovereign obligations of the United States of America at 'AAA' with a Negative Outlook, and the country ceiling is similarly rated at 'AAA'. The local currency sovereign rating expresses the maximum limit for local currency ratings of most, but not all, issuers in a given country. At current levels, the ratings of U.S. insurance organizations and other corporate issuers are not likely to be constrained by sovereign or macroeconomic risks.

reasonably well, and industry capital levels returned to record levels in 2010 due to earnings retention and investment gains. Operating leverage ratios are at historical lows. This capital strength balances with near-term expectations for weaker profitability and returns on capital, as premium rates are not likely to improve materially in the current economic and insurance market environment, and yields on invested assets remain low.

Ratings Range Based on Industry Profile/Operating Environment




## Peer Analysis

### Berkshire Hathaway Compares Favorably to Peer Companies

In comparison to a group of other highly rated nonlife insurance companies, Fitch views BRK's average operating leverage metrics, such as ratios of average assets to average equity and revenues to equity, as materially lower than those of the highly rated peer group. While these are simplistic metrics, which fail to consider differences in numerous factors such as business and asset mix, Fitch views them as providing context for BRK's ratings.

Unlike peer companies included in this analysis, BRK does not actively manage its shareholders' equity by repurchasing shares or paying a common shareholders' dividend. These practices suppress BRK's return on equity relative to peers included in this analysis.

BRK's GEICO subsidiary competes against large national auto insurers such as Progressive, Allstate, and State Farm, and the company's growth on auto insurance net premiums written has outpaced this peer group. Fitch views this trend cautiously because price competition in the auto insurance market is intense and underpriced business can adversely affect future underwriting results.

## Peer Comparison Table — 2011

| ($ Bil.) | IDR | Premiums Earned | Combined Ratio (%) | Return On Equity (%) | Debt-to-Capital (%) | EBIT/Interest Expense (x) | Premiums/ Equity (x) | Asset/ Equity (x) | Revenues/ Equity (x) |
|---|---|---|---|---|---|---|---|---|---|
| Berkshire Hathaway | AA– | 27.0 | 97.0 | 6.4 | 26.5 | 6.7 | 0.2 | 2.3 | 0.9 |
| ACE Limited | A+ | 13.7 | 94.6 | 6.7 | 17.4 | 9.4 | 0.6 | 3.6 | 0.7 |
| Chubb | AA– | 11.6 | 95.3 | 10.8 | 20.3 | 10.0 | 0.8 | 3.3 | 0.9 |
| Progressive | A+ | 14.9 | 93.0 | 17.1 | 30.3 | 12.2 | 2.6 | 3.8 | 2.7 |
| Travelers | A+ | 22.1 | 105.1 | 5.7 | 23.3 | 4.5 | 0.9 | 4.3 | 1.0 |

IDR – Issuer default rating. Note: P/C operations only for Berkshire Hathaway's earned premiums and combined ratio. Debt-to-total capital excludes unrealized gains on fixed-income securities and goodwill.
Source: SEC filings.

## Capitalization and Leverage

| ($ Bil.) | 2007 | 2008 | 2009 | 2010 | 2011 |
|---|---|---|---|---|---|
| Statutory Surplus | 61.9 | 50.8 | 64.1 | 94.4 | 96.2 |
| Net Premiums Written/Surplus (x) | 0.31 | 0.42 | 0.33 | 0.23 | 0.25 |
| Net Leverage (x) | 1.40 | 1.64 | 1.40 | 1.37 | 1.07 |
| Gross Leverage (x) | 1.44 | 1.71 | 1.49 | 1.04 | 1.24 |
| Debt-to-Total Capital Ratio (%) | 21.5 | 24.5 | 21.8 | 26.4 | 26.3 |

Note: All data is statutory except debt-to-total capital ratio, which is consolidated GAAP.
Source: SNL Financial.

**Fitch's Expectation**

Fitch expects BRK to manage its debt-to-total capital ratio, excluding unrealized gains on fixed-income securities, to remain below 30%. Both operating leverage and net leverage at the consolidated insurance operations are better than Fitch's guidelines for the current rating category.

### Strong Capitalization Supports Ratings

- History of superior growth in book value.
- Reasonable financial leverage.
- Conservative capitalization at insurance subsidiaries.

### History of Superior Growth in Book Value

BRK has a well-established history of growing book value at a significantly greater rate than market indices. Over the course of current management's 47-year tenure, the book value of BRK's class A shares has grown from $19 to $99,860. Book value appreciation was achieved using insurance float, reaching approximately $70 billion in 2011, to fund long-term investments in common stocks.

Going forward, earnings from acquisitions of non-insurance operations are likely to have an increasing influence on growing BRK's book value. BRK's per share growth rate attributable to investments has slowed over the past decade to less than 9% relative to a nearly 20% compound growth rate since 1965. Further, BRK's management has announced its willingness to repurchase stock at up to 110% of book value. Stock repurchases will not be used during particularly weak markets nor if cash equivalent holdings fall below $20 billion.

### Reasonable Financial Leverage

Fitch's assessment of the organization's financial leverage includes debt issued by the organization's ultimate holding company, debt issued by insurance holding company subsidiaries, and debt issued by the company's finance segment subsidiaries that is guaranteed by BRK. Debt-to-total capital ratio is moderate at 17% following this approach. Debt from BRK's utilities and Burlington Northern Santa Fe Corp. (BNSF) are expected to be self-funding. Consolidated debt-to-total capital was under 27% at year-end 2011. Please refer to the "Segment Balance Sheets" table in Appendix A for additional detail.

### Conservative Capitalization at Insurance Subsidiaries

From a statutory perspective, the combined surplus of the NICO and its affiliated insurers reached $95 billion at year-end 2011, up modestly from 2010. The placement of BNSF under NICO increased surplus by approximately $22 billion in 2010. At year-end 2011, operating leverage, measured as the ratio between net written premium and surplus, was 0.25x, while net leverage, measured as net written premium and liabilities over surplus, was 1.1x. Both operating leverage and net leverage are very conservative relative to peer companies and indicative of strong capitalization.

## Debt Service Capabilities and Financial Flexibility

| ($ Bil.) | 2007 | 2008 | 2009 | 2010 | 2011 | Fitch's Expectation |
|---|---|---|---|---|---|---|
| Operating EBIT/Interest Expense (x) | 8.6 | 4.3 | 6.9 | 6.9 | 5.9 | Fixed charge coverage has been steady but below Fitch's 12x guideline for the rating category. Consolidated cash holdings are expected to remain above the $10 billion target stated by BRK's management. |
| Maximum Dividend Coverage (x) | 3.4 | 3.4 | 4.5 | 2.7 | 3.5 | |
| Cash Flow from Operations | 12.6 | 11.3 | 15.8 | 17.9 | 20.5 | |
| Consolidated Cash and Equivalents | 44.3 | 25.5 | 30.6 | 38.2 | 37.3 | |

Note: Consolidated GAAP.
Source: SNL Financial.

### Coverage Below Median Guidelines but Flexibility Is High

- Moderate interest coverage by earnings.
- Excellent market access.
- Large holdings of cash and equivalents.

Interest coverage at BRK was below Fitch's expectations for the rating category. BRK has excellent financial flexibility given its history of maintaining large consolidated cash balances, proven access to debt and equity markets, and a large liquid investment portfolio.

### Moderate Interest Coverage by Earnings

Fitch's expectations for companies with insurer financial strength (IFS) ratings in the 'AA' category include median interest coverage of 12x. BRK's interest coverage has historically been in the high single digits, which is more consistent with companies rated 'A'. Debt in BRK's capital structure funds widely different activities. This blended picture is below Fitch's expectations relative to insurance company peers.

### Excellent Market Access

At March 31, 2012, BRK's subsidiaries in aggregate had approximately $4.5 billion in available capacity under lines of credit and commercial paper. In addition to its own holding company issued debt, BRK guarantees the debt of its insurance, finance, and financial products subsidiaries. The debt obligations of subsidiaries in the railroad, utilities, and energy segment do not receive a parent guarantee but likely still benefit in the form of lower interest rates given its ultimate parent. A table detailing principal payments by business segment can be found in Appendix A.

### Large Holdings of Cash and Equivalents

Management has publicly stated its intention to maintain $10 billion in cash and equivalents within the consolidated enterprise and has approximately $7.3 billion at the holding company level. Most of BRK's liquid assets are maintained at the insurance company subsidiaries with cash and equivalents totaled $33 billion at year-end 2011. BRK's insurance company subsidiaries could pay approximately $9.5 billion of dividends in 2012 without prior regulatory approval.

## Financial Performance and Earnings

| ($ Bil.) | 2007 | 2008 | 2009 | 2010 | 2011 |
|---|---|---|---|---|---|
| Premiums Earned | 19.6 | 20.3 | 21.2 | 21.2 | 23.0 |
| Net Investment Income | 5.5 | 4.7 | 5.6 | 6.3 | 8.4 |
| Net Income | 8.3 | 2.8 | 3.2 | 8.7 | 8.1 |
| Combined Ratio (%) | 82.8 | 91.8 | 91.1 | 89.9 | 99.7 |
| Operating Ratio (%) | 54.7 | 68.7 | 64.6 | 60.3 | 63.0 |
| Return on Surplus (%) | 13.7 | 5.0 | 5.6 | 11.0 | 8.6 |

Note: Statutory data, property/casualty insurance only.
Source: SNL Financial.

**Fitch's Expectation**

Consolidated statutory five-year average combined ratio of 87.2% and operating ratio of 60.4% compared favorably to Fitch's guidelines for the current rating category of 95% and 82%, respectively.

### Consistent Profitability Bolsters Ratings

- Earnings volatility tied to derivative and catastrophe exposures.
- Strong profitability from insurance operations.
- Widely diversified sources of earnings.

Fitch views BRK's profitability as solid, characterized by a large earnings base, extremely diverse sources of earnings, and significant sensitivity to capital market conditions.

### Earnings Volatility Tied to Derivative and Catastrophe Exposures

Given the large notional values and long duration of BRK's outstanding derivative contracts, Fitch believes the company's GAAP basis earnings will continue to be exposed to earnings volatility. Additionally, Fitch believes that BRK's earnings will be exposed to potential volatility from the company's reinsurance businesses and exposure to catastrophe-related losses as well as its large equity investment portfolio.

### Strong Profitability from Insurance Operations

BRK's five key insurance subsidiaries, GEICO, GEICO Indemnity Company, GenRe, Columbia Insurance Co., and NICO, are solid performers with strong competitive positions and large market shares that in most years enable the companies to generate significant earnings. Fitch believes that BRK's insurance segments are facing adverse cyclical pricing trends that are pressuring underwriting margins.

### Widely Diversified Sources of Earnings

Potential earnings volatility is partially offset by earnings from the company's varied business interests, many of which have little correlation with either the reinsurance business or capital markets. For example, in 2008, when capital markets suffered their worst financial performance in several decades, BRK still generated $5 billion of net earnings. Similarly, in 2005, when the reinsurance market suffered record catastrophe-related losses, BRK generated $8.5 billion of net income.

#### *Railroad*

BRK acquired control of BNSF in February 2010. Previous earnings from BRK's non-controlling interest in BNSF were reported in the Insurance segment's investment income section. Revenues increased 16% to $19.5 billion in 2011 with improvement across all four business groups: consumer products, coal, industrial products, and agricultural products. Overall revenue growth benefited from increased average revenue per car and greater volume of cars handled. BNSF has been a profitable segment for BRK, averaging a pretax margin of greater than 20% over the most recent three-year period.

## Net Earnings by Business Segment

| ($ Mil.) | 2007 | 2008 | 2009 | 2010 | 2011 |
|---|---|---|---|---|---|
| Insurance Segments — Underwriting | 2,184 | 1,739 | 949 | 1,301 | 154 |
| Insurance Segments — Investment Income | 3,510 | 3,610 | 4,271 | 3,860 | 3,555 |
| Railroad | — | — | — | 2,235 | 2,972 |
| Utilities and Energy | 1,114 | 1,704 | 1,071 | 1,131 | 1,204 |
| Manufacturing, Service, and Retailing | 2,353 | 2,283 | 1,113 | 2,462 | 3,039 |
| Finance and Financial Products | 632 | 469 | 411 | 441 | 516 |
| **Total Non-Insurance Business Segments** | **4,099** | **4,456** | **2,595** | **6,269** | **7,731** |
| Other | (159) | (166) | (246) | (337) | (665) |
| Investment and Derivative Gains/Losses | 3,579 | (4,645) | 486 | 1,874 | (521) |
| **Net Earnings** | **13,213** | **4,994** | **8,055** | **12,967** | **10,254** |

Source: BRK 10-K.

### *Utilities and Energy*

BRK owns 90% of MidAmerican Energy Holdings Co. (MidAmerican), an international energy business. In the U.S., MidAmerican's operations consist of two regulated utilities, PacifiCorp and MidAmerican Energy Co., which account for nearly three-quarters of MidAmerican's revenue and greater than one-half of its earnings. MidAmerican also operates two interstate natural gas pipelines in the U.S. and two electricity distribution businesses in the U.K. Overall, MidAmerican reports steady revenues in excess of $11 billion and has a three-year average pretax margin of greater than 13%.

### *Manufacturing, Service, and Retailing*

This segment is by far the most diverse and is divided into five operating units: Marmon, McLane Co., Other Manufacturing, Other Service, and Retailing. Overall results were favorable as the segment reported earnings of $3 billion on revenues of $72 billion for 2011, up from 2010 figures of $2.5 billion and $67 billion, respectively. The pretax operating margin was 7% in 2011, up from 6.4% in 2010 and 3.3% in 2009.

Margins vary considerably across the five operating units, but McLane is noteworthy given its very thin margins in the wholesale distribution business as well as its concentration risk. Approximately 30% of McLane's revenues are attributable to Wal-Mart, so any disruption with the Wal-Mart relationship would have a material impact. McLane's pretax margin was 1.1% in 2011 on revenues of $33 billion.

The Other Manufacturing operating unit includes manufacturers of building products, apparel, and various other products. This unit showed the most growth in 2011 and reported earnings of $2.4 billion on revenues of $21 billion. The 2011 acquisition of Lubrizol, a manufacturer of specialty chemicals, accounted for nearly one-half of the revenue growth in the unit.

### *Finance and Financial Products*

BRK's Finance and Financial Products segment consists of manufactured housing and finance, transportation equipment, furniture leasing, and other miscellaneous financing activities. Overall revenues have been relatively stable at $4 billion over the past three years despite declines in the housing market. The pretax operating margin in 2011 was nearly 13% for the entire segment, up from 10% in both 2010 and 2009.

## Investment and Liquidity

| ($ Bil.) | 2007 | 2008 | 2009 | 2010 | 2011 | Fitch's Expectation |
|---|---|---|---|---|---|---|
| Invested Assets | 124 | 107 | 128 | 162 | 166 | Risky assets as a percentage of surplus remain substantially worse than Fitch's 50% guideline for the current rating category. The risky asset ratio is expected to remain elevated given BRK's unique investment strategy. The liquid assets/reserve ratio was slightly below Fitch's median guideline of 150%. |
| Investment Yield | 4.6 | 4.0 | 4.8 | 4.3 | 5.1 | |
| Risky Assets | 143.0 | 136.3 | 144.1 | 127.1 | 143.2 | |
| Liquid Assets/Technical Reserves | 152.8 | 130.0 | 141.5 | 135.0 | 130.6 | |
| Assets/Stockholders' Equity (Consolidated) | 2.3 | 2.4 | 2.3 | 2.4 | 2.4 | |

Note: All statutory data except assets/stockholders' equity ratio, which is consolidated GAAP.
Source: SNL Financial.

### Investment Allocation Is an Idiosyncratic Risk

- Substantial allocation to common equities.
- High risky asset ratio.
- Large cash holdings.

Investment and asset risks are higher than peers' given the oversized allocation to common equity securities in the insurance subsidiaries. Warren Buffett's investment strategy is a competitive advantage and a point of differentiation for BRK.

### Substantial Allocation to Common Equities

Substantially all the common equity investments reside within the insurance operating companies, and the turnover among investment names is minimal. Consequently, the insurance subsidiaries' investment portfolios are weighted much more heavily toward equity investments than the overall insurance industry.

The success of this given strategy can be seen in BRK's ability to maintain a net unrealized gain position throughout the recent credit crisis. From a rating perspective, BRK's overall low operating leverage and strong liquidity profile enable the company to ride out periods of depressed market values and reduce concerns about this source of potential capital volatility.

### High Risky Asset Ratio

The risky asset ratio at the consolidated insurance group was high at 143% of policyholders' surplus on Dec. 31, 2011. Invested assets categories included in the risky asset ratio are unaffiliated common stock, affiliated investments, and below investment-grade bonds.

The purchase of unowned shares in BNSF was completed in February 2010, and BNSF is now categorized on NICO's balance sheet as other invested assets valued at $35 billion. BNSF represented 21% of consolidated statutory invested assets at year-end 2011 and is highly illiquid. GAAP net earnings from BNSF were $3 billion in 2011.

### Large Cash Holdings

Cash holdings have consistently been sizeable at the consolidated insurance company level, amounting to $14 billion or 14% of total unaffiliated investments. A large allocation to cash is expected to continue as management publicly commits to a $10 billion level.

## Reserve Adequacy

| ($ Bil.) | 2007 | 2008 | 2009 | 2010 | 2011 |
|---|---|---|---|---|---|
| Loss Reserves | 25.5 | 26.8 | 27.9 | 27.7 | 30.6 |
| LAE Reserves | 3.9 | 4.4 | 4.8 | 5.4 | 6.0 |
| Reserve Development – Favorable/(Unfavorable) | 1.2 | 1.4 | 1.5 | 2.2 | 1.7 |
| Reserve Development/Premium (%) | 6.0 | 6.8 | 7.2 | 10.4 | 7.2 |
| Reserve Development/Surplus (%) | 3.4 | 3.0 | 2.2 | 2.0 | 1.7 |

**Fitch's Expectation**

Consolidated statutory favorable reserve development as a percentage of surplus was consistent with Fitch's median guideline of 2%. The survival ratio for asbestos and environmental reserves is expected to meet Fitch's guideline of 11x–13x.

Note: Statutory data property/casualty operations only.
Source: SNL Financial.

### Reserves Appear Adequate

- History of favorable reserve development.
- Growing exposure to asbestos and environmental (A&E) liabilities.

Fitch believes that BRK's insurance subsidiaries' reserves are adequate and views the reserving risk as ranging from low at GEICO to comparatively high at GenRe and NICO due to the type of business each company writes.

### History of Favorable Reserve Development

BRK's reserves have developed favorably in recent years, and the development over the last five years has been modest relative to the company's consolidated reserves and equity base. Favorable reserve development as a percentage of earned premiums and policyholders' surplus averaged 7.5% and 2.5%, respectively, over the past five years.

### Growing Exposure to A&E Liabilities

BRK has grown its A&E exposure through retroactive reinsurance contracts most notably with Equitas Limited, American International Group (AIG), and CNA Financial Corp. The Equitas agreement represents the single largest A&E exposure and originated in 2006 when NICO agreed to reinsure pre-1993 non-life liabilities of Lloyd's of London. At the time of the transaction, the aggregate indemnification was $13.8 billion and NICO received $7.2 billion in assets. NICO paid losses of $328 million related to this transaction in 2011, and the associated reserves, a significant portion of which are A&E exposures, amounted to $7.6 billion at year-end 2011.

In April 2011, NICO agreed to assume AIG's A&E liabilities. NICO accepted $1.6 billion in premiums for a maximum liability of $3.5 billion. This transaction is similar to the July 2010 deal with CNA, when NICO accepted $2.2 billion in premiums for a maximum liability of $4 billion. Payments under these two reinsurance agreements totaled $411 million during 2011.

Fitch views BRK's exposure to adverse asbestos or environmental reserve development as material but manageable in relation to the company's overall very strong capitalization and financial flexibility. Fitch estimates BRK's net A&E reserve survival ratio based on three-year average paid claims is greater than 15x. This survival ratio was consistent with Fitch's guidelines for highly rated insurers.

## Reinsurance, Risk Management, and Catastrophe Risk

### Acceptable Reinsurance Strategy

- Modest use of purchased reinsurance.
- Ratings consider intercompany reinsurance.
- Significant catastrophe risk.

Fitch views purchased reinsurance as having comparatively little effect on BRK's ratings. The company does have sizeable exposure to catastrophe losses in its reinsurance segment, but it appears well managed.

### Modest Use of Purchased Reinsurance

The company typically buys little external reinsurance and retains roughly 95% of its direct and assumed premiums written. Fitch views this as a reasonable strategy given BRK's strong capital position and the company's reinsurance segment's business model, which focuses on providing reinsurance and accepting primary insurers' underwriting volatility. Among BRK's insurance subsidiaries, GEICO essentially retains all of its premiums and NICO typically retains approximately 90% of its premiums.

### Ratings Consider Intercompany Reinsurance

There is a significant amount of intercompany reinsurance between BRK's various insurance company subsidiaries, typically with NICO or Columbia serving as the assuming company. Fitch views the reinsurance agreements between GenRe and NICO and Columbia as a key factor supporting its use of a group rating approach, and thus a key factor supporting GenRe and its subsidiaries' IFS ratings.

### Significant Catastrophe Risk

Fitch believes that BRK, primarily through NICO and, to a lesser extent, GenRe, has significant but manageable exposure to severe catastrophe events. Estimates of gross losses to a one-in-500-years catastrophe were less than 10% of consolidated statutory capital at year-end 2010.

## Key Non-Insurance Operations/Exposure

| ($ Mil.) | 2007 | 2008 | 2009 | 2010 | 2011 |
|---|---|---|---|---|---|
| **Equity Index Put Options** | | | | | |
| Notional Value | 35,043 | 37,134 | 37,990 | 33,891 | 34,014 |
| Net Liability | 4,610 | 10,022 | 7,309 | 6,712 | 8,499 |
| Gain/(Loss) | (283) | (5,028) | 2,731 | 172 | (1,787) |
| **Credit Default Swaps** | | | | | |
| Notional Value | 30,156 | 4,660 | 25,140 | 24,500 | 24,096 |
| Net Liability | 4,094 | 1,838 | 1,553 | 1,323 | 1,527 |
| Gain/(Loss) | 127 | (1,774) | 789 | 250 | (251) |

**Fitch's Expectation**

BRK did not enter into new equity index put option contracts or credit default contracts during 2010 and 2011. Fitch does not expect BRK to meaningfully expand its speculative derivative exposure.

Source: SEC filings.

### Investments Allocation Is an Idiosyncratic Risk

- Large exposure to speculative derivatives.

### Large Exposure to Speculative Derivatives

Fitch views BRK's notional exposure to various equity put derivative and CDS contracts as large relative to the company's capital base, but manageable given the nature and terms of the contracts. This exposure is primarily in the Finance and Financial Products business and is speculative in nature and therefore not classified as hedges from an accounting perspective.

BRK's equity put contracts' notional values represent the company's aggregate undiscounted amount payable at the contract's expiration assuming that the value of the underlying index is zero at expiration date. The notional amounts attributed to the CDS contracts represent the maximum undiscounted future value of losses payable under the contracts assuming a sufficient number of credit losses occur.

BRK is not required to post collateral for most of its CDS and equity index put contracts (on March 31, 2012, BRK had $45 million in collateral versus these derivative contracts). No additional collateral would be posted in the event of a downgrade of BRK's debt ratings unless ratings fell into the 'BBB' category. In this instance, an additional $1.1 billion of collateral would be required.

BRK's equity index put contracts are tied to four major equity market indexes, including three indexes located outside the U.S. The equity index options can be exercised only upon their expiration date and generally had a remaining average life of nine years on Dec. 31, 2011. BRK's potential obligations under the equity index put contracts arise if the index value is below the contracts' strike price at expiration. Substantially, all the contracts were written with the strike price equal to the indexes' then-current spot price.

Given the equity put contracts' long-dated durations, there is significant uncertainty about what the underlying equity index values will be upon the contracts' expiration. At year-end 2011, Fitch estimated that BRK would pay approximately $6.9 billion to settle the remaining 39 contracts. Further, if all four indexes declined by 20%, BRK's payment would increase to approximately $11.1 billion. Because BRK collected the premiums for these contracts at inception, this analysis ignores the earnings that the company could have generated over the contracts' durations. Nevertheless, in Fitch's view, the indexes are unlikely to be at such values that they generate liabilities that are material relative to the size of BRK's capital base.

BRK's potential obligations under CDS contracts are derived primarily from contracts written on states and municipalities, high yield indexes, and individual issuers consisting primarily of investment-grade issuers. BRK's obligations under the contracts generally arise from the underlying issuer's nonpayment or bankruptcy and are subject to contract limits. On Dec. 31, 2011, BRK's state and municipality CDS contracts had a weighted average duration of approximately 9.3 years. High yield index CDS contracts and individual corporate CDS contracts will expire in 2013.

U.S. GAAP accounting requires BRK to report the change in the market value of its net liability from the CDS and equity index put contracts as a component of net income in its quarterly financial statements. Thus, the company's earnings and shareholders' equity are subject to significant fluctuations in the equity put contracts and CDS contracts values, although there is generally no exchange of cash until the contracts' expiration dates.

## Appendix A: Additional Financial Exhibits

### Segment Balance Sheets

| ($ Mil., As of Dec. 31, 2011) | Consolidated | Tax Liability | Holdco Insurance Other and Finance | Holdco Insurance Other | Finance | Railroad, Utilities and Energy |
|---|---|---|---|---|---|---|
| Assets | 392,647 | — | 275,270 | 250,319 | 24,951 | 117,377 |
| Goodwill | 53,213 | — | 33,157 | 32,125 | 1,032 | 20,056 |
| Liabilities | 223,686 | 37,804 | 140,286 | 114,887 | 25,399 | 45,596 |
| Total Shareholders' Equity | 168,961 | — | 134,984 | 135,432 | (448) | 71,781 |
| Debt | 60,384 | — | 27,804 | 13,768 | 14,036 | 32,580 |
| Debt to Total Capital (%) | 26.3 | — | 17.1 | 9.2 | 103.3 | 31.2 |
| Debt to Total Tangible Capital (%) | 34.3 | — | 21.5 | 11.8 | 111.8 | 38.7 |

Holdco – Holding Company.
Source: SEC filings.

### Equity Investments Summary

| ($ Mil.) | 2011 | 2010 | 2009 | 2008 | 2007 | 2006 |
|---|---|---|---|---|---|---|
| Cost | 49,610 | 35,544 | 37,207 | 40,140 | 44,695 | 28,353 |
| Unrealized Gains | 28,773 | 26,641 | 24,874 | 14,782 | 31,289 | 33,217 |
| Unrealized Losses | (1,392) | (672) | (3,047) | (5,849) | (985) | (37) |
| Net Unrealized Gain/(Loss) | 27,381 | 25,969 | 21,827 | 8,933 | 30,304 | 33,180 |
| Investment in Equity Securities (FMV) | 76,991 | 61,513 | 59,034 | 49,073 | 74,999 | 61,533 |
| | | | | | | |
| Total Common Shareholders' Equity | 168,961 | 162,934 | 131,102 | 109,267 | 120,733 | 108,419 |
| Investments in Equities as a % of Shareholders' Equity | 46 | 38 | 45 | 45 | 62 | 57 |
| Net Unrealized Gain as a % of Shareholders' Equity | 16 | 16 | 17 | 8 | 25 | 31 |

Source: SEC filings.

## Insurance Segment Operating Results

| ($ Mil.) | 2007–2011 Average | 2010–2011 Change | 2011 | 2010 | 2009 | 2008 | 2007 |
|---|---|---|---|---|---|---|---|
| **Consolidated** | | | | | | | |
| Net Premiums Earned | 29,603 | 4.3 | 32,075 | 30,749 | 27,884 | 25,525 | 31,783 |
| Underwriting Gain/(Loss) | 1,997 | (87.7) | 248 | 2,013 | 1,559 | 2,792 | 3,374 |
| Combined Ratio (%) | 93.1 | 5.7 | 99.2 | 93.5 | 94.4 | 89.1 | 89.4 |
| **GEICO** | | | | | | | |
| Net Premiums Earned | 13,501 | 7.6 | 15,363 | 14,283 | 13,576 | 12,479 | 11,806 |
| Underwriting Gain/(Loss) | 874 | (48.4) | 576 | 1,117 | 649 | 916 | 1,113 |
| Combined Ratio (%) | 93.4 | 4.1 | 96.3 | 92.2 | 95.2 | 92.7 | 90.6 |
| **General Re** | | | | | | | |
| Net Premiums Earned | 5,886 | 2.2 | 5,816 | 5,693 | 5,829 | 6,014 | 6,076 |
| Underwriting Gain/(Loss) | 394 | (68.1) | 144 | 452 | 477 | 342 | 555 |
| Combined Ratio (%) | 93.3 | 5.4 | 97.5 | 92.1 | 91.8 | 94.3 | 90.9 |
| **Berkshire Hathaway Reinsurance Group** | | | | | | | |
| Net Premiums Earned | 8,383 | 0.8 | 9,147 | 9,076 | 6,706 | 5,082 | 11,902 |
| Underwriting Gain/(Loss) | 512 | (505.7) | (714) | 176 | 349 | 1,324 | 1,427 |
| Combined Ratio (%) | 92.5 | 9.7 | 107.8 | 98.1 | 94.8 | 73.9 | 88.0 |
| **Berkshire Hathaway Primary Group** | | | | | | | |
| Net Premiums Earned | 1,834 | 3.1 | 1,749 | 1,697 | 1,773 | 1,950 | 1,999 |
| Underwriting Gain/(Loss) | 217 | (9.7) | 242 | 268 | 84 | 210 | 279 |
| Combined Ratio (%) | 88.2 | 2.0 | 86.2 | 84.2 | 95.3 | 89.2 | 86.0 |

Note: U.S. GAAP basis.
Source: SEC filings.

## Principal Payments by Business Segment

| ($ Mil.) | 2012 | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|---|
| Insurance and Other | 3,390 | 2,725 | 1,345 | 1,918 | 869 |
| Railroad, Utilities, and Energy | 2,567 | 1,774 | 1,618 | 713 | 681 |
| Finance and Financial Products | 3,155 | 3,661 | 1,335 | 1,656 | 205 |
| **Total** | **9,112** | **8,160** | **4,298** | **4,287** | **1,755** |

Source: BRK 10-K.

## BRK's Significant Equity Investments

($ Mil., As of Dec. 31, 2011)

| Common Stock | Market and Carrying Value | % of Total Equity Investments | % of BRK's Total Equity |
|---|---|---|---|
| Coca-Cola | 13,994 | 18 | 8 |
| IBM | 11,751 | 15 | 7 |
| Wells Fargo & Co. | 10,575 | 14 | 6 |
| American Express Co. | 7,151 | 9 | 4 |
| Procter & Gamble Co. | 5,121 | 7 | 3 |
| Kraft Foods Inc. | 3,252 | 4 | 2 |
| Wal-Mart Stores Inc. | 2,333 | 3 | 1 |
| Conoco Phillips | 2,121 | 3 | 1 |
| Johnson & Johnson | 1,903 | 2 | 1 |
| US Bancorp | 1,868 | 2 | 1 |
| Moody's | 957 | 1 | 1 |
| Directv | 870 | 1 | 1 |
| Washington Post Co. | 651 | 1 | 0 |
| M&T Bank Corp. | 411 | 1 | 0 |
| Costco Wholesale Corp. | 361 | 0 | 0 |
| Visa | 291 | 0 | 0 |
| CVS Caremark | 290 | 0 | 0 |
| Intel | 279 | 0 | 0 |
| General Dynamics | 257 | 0 | 0 |
| Da Vita Inc. | 204 | 0 | 0 |
| Dollar General | 185 | 0 | 0 |
| Torchmark Corp. | 184 | 0 | 0 |
| USG Corp. | 173 | 0 | 0 |
| Mastercard | 151 | 0 | 0 |
| Sanfoi Aventis | 148 | 0 | 0 |
| General Electric Co. | 139 | 0 | 0 |
| Verisk Analytics | 138 | 0 | 0 |
| Liberty Media Corp. | 133 | 0 | 0 |
| United Parcel Service Inc. | 105 | 0 | 0 |
| GlaxoSmithKline | 69 | 0 | 0 |
| Bank of New York Mellon Corp. | 36 | 0 | 0 |
| Gannett Inc. | 23 | 0 | 0 |
| Ingersoll Rand Ltd. | 19 | 0 | 0 |
| Comdisco | 9 | 0 | 0 |
| Other | 10,839 | 14 | 6 |
| **Total** | **76,991** | **100** | **38** |

Source: BRK's Dec. 31, 2011, Form 13-FHR.

## Appendix B: Other Ratings Considerations

Below is summary of additional ratings considerations of a “technical” nature that are also part of Fitch’s ratings criteria.

### Group IFS Rating Approach

In establishing its operating company IFS ratings on BRK’s insurance and reinsurance company subsidiaries within the context of its group rating methodology, Fitch has established two core groups — one comprising BRK’s reinsurance subsidiaries and the other, BRK’s primary companies. The rated members of the two core groups are shown in Appendix C.

While the implied issuer default ratings (IDRs) of the two core groups differ by one notch (reinsurance group IDR at ‘AA+’ and primary group at ‘AA’), the IFS ratings of all rated operating companies are the same at ‘AA+’. This is because IFS-to-IDR notching differences between reinsurance and primary companies (*see below*) counterbalance the differences in the two core groups’ implied IDRs.

Intercompany reinsurance contracts between BRK’s GenRe, NICO, and Columbia subsidiaries also support its use of a group rating approach. Fitch views the explicit and implicit support provided by these reinsurance contracts as key factors supporting GenRe and its subsidiaries’ IFS ratings.

### Notching

Per Fitch notching criteria, BRK’s country of domicile, the U.S., is a “strong” regulatory environment with restrictions on payments from the operating companies to holding company and priority afforded primary policyholder obligations (but not reinsurance obligations).

#### Notching Summary

**Holding Company**

Because BRK is a conglomerate including both insurance and non-insurance operations, Fitch does not employ its standard “insurance company IDR to holding company IDR” notching approach in establishing its IDR on BRK. Doing so would overlook a material portion of BRK’s credit profile. BRK’s IDR considers the underlying strength of BRK’s insurance operations and the credit profile of non-insurance operations in addition to BRK’s financial leverage, interest coverage, and financial flexibility, in absolute terms and relative to other corporate issuers.

**IFS Ratings**

The IFS ratings of BRK’s primary insurance subsidiaries assume a baseline recovery of “good” based on policyholder priority, and apply standard notching (one above the implied operating company IDR). The IFS ratings of BRK’s reinsurance subsidiaries assume a baseline recovery of “average” based on lack of policyholder priority for reinsurance obligations, and apply standard notching (IFS set equal to implied IDR).

**Debt**

The senior unsecured debt rating assumes a baseline recovery of “below average,” and standard notching (one below the holding company IDR) was applied.

**Hybrids**

Not applicable.

### Exceptions to Criteria/Ratings Limitations

None.

## Appendix C: Complete Ratings List

### Fitch's Ratings on Berkshire Hathaway Companies

| Company | Type/Rating | Company Type |
|---|---|---|
| Berkshire Hathaway Inc. | IDR/AA– | U.S.-Based Ultimate Holding Company |
| **Insurance Subsidiaries** | | |
| GEICO Corp. | IDR/AA– | U.S.-Based Intermediate Holding Company |
| GenRe Corp. | IDR/AA– | U.S.-Based Intermediate Holding Company |
| Columbia Insurance Co. | IFS/AA+ | U.S.-Based Insurance Operating Company |
| Fairfield Insurance Co. | IFS/AA+ | U.S.-Based Insurance Operating Company |
| General Reinsurance Corp. | IFS/AA+ | U.S.-Based Reinsurance Operating Company |
| General Star Indemnity Co. | IFS/AA+ | U.S.-Based Insurance Operating Company |
| General Star National Insurance Co. | IFS/AA+ | U.S.-Based Insurance Operating Company |
| Genesis Insurance Co. | IFS/AA+ | U.S.-Based Insurance Operating Company |
| Government Employees Insurance Co. | IFS/AA+ | U.S.-Based Insurance Operating Company |
| National Fire & Marine Insurance Co. | IFS/AA+ | U.S.-Based Insurance Operating Company |
| National Indemnity Co. | IFS/AA+ | U.S.-Based Reinsurance Operating Company |
| National Indemnity Co. of Mid-America | IFS/AA+ | U.S.-Based Insurance Operating Company |
| National Indemnity Co. of the South | IFS/AA+ | U.S.-Based Insurance Operating Company |
| National Liability and Fire Insurance Co. | IFS/AA+ | U.S.-Based Insurance Operating Company |
| Wesco Financial Insurance Co. | IFS/AA+ | U.S.-Based Reinsurance Operating Company |
| **Utility and Energy Subsidiaries** | | |
| MidAmerican Energy Holdings Co. | IDR/BBB+ | U.S.-Based Intermediate Holding Company |
| MidAmerican Funding LLC | IDR/BBB+ | U.S.-Based Intermediate Holding/Funding Company |
| MidAmerican Energy Co. | IDR/A– | U.S.-Based Utility Company |
| Northern Natural Gas Co. | IDR/A | U.S.-Based Natural Gas Pipeline Company |
| CE Electric UK Funding Co. | IDR/BBB | U.K.-Based Intermediate Holding/Funding Company |
| Yorkshire Electricity Group PLC | IDR/BBB+ | U.K.-Based Utility Company |
| Yorkshire Power Group Ltd. | IDR/BBB+ | U.K.-Based Utility Company |
| Northern Electric Distribution Ltd. | IDR/A– | U.K.-Based Utility Company |
| Northern Electric PLC | IDR/BBB+ | U.K.-Based Utility Company |
| PacifiCorp | IDR/BBB | U.S.-Based Electric Service Provider |
| **Finance Subsidiaries** | | |
| Xtra Corp. | IDR/A+ | U.S.-Based Intermediate Holding Company |
| Xtra Finance Corp. | IDR/A+ | U.S.-Based Transportation Leasing Company |

IFS – Insurer financial strength. IDR – Issuer default rating.
Source: Fitch Ratings.

The ratings above were unsolicited and have been provided by Fitch as a service to investors.

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FitchRatings

## Fitch Rates Berkshire Hathaway Corp's Senior Debt Issue 'A+' 

Ratings Endorsement Policy
01 Feb 2013 2:06 PM (EST)

Fitch Ratings-Chicago-01 February 2013: Fitch Ratings has assigned an 'A+' rating to the $2.6 billion of senior unsecured notes issued by Berkshire Hathaway Inc. (NYSE:BRK).

The issuance consists of the following: $300 million of 0.8% notes maturing in 2016, $800 million of 1.55% notes maturing in 2018, $500 million of 3% notes maturing in 2023 and $1 billion of 4.5% notes maturing in 2043. Proceeds from the senior notes are to be used to redeem $2.6 billion in senior unsecured notes maturing on Feb. 11, 2013, and consequently financial leverage ratios will not change.

Fitch's ratings on BRK are supported by extremely strong capitalization and market position of its insurance subsidiaries, solid operating performance with good diversification across business lines and excellent financial flexibility and liquidity.

Also considered in the ratings are material risk exposures related to an above-average investment allocation to common stocks, a substantial position in equity derivatives, insured natural catastrophe exposures, and various issues associated with the company's acquisition strategy and succession planning.

Fitch's assessment of the organization's financial leverage includes debt issued by the organization's ultimate holding company, debt issued by insurance holding company subsidiaries, and debt issued by the company's finance segment subsidiaries that is guaranteed by BRK. Following this approach, debt-to-total capital and debt-to-tangible capital ratios were moderate at 19% and 25%, respectively, at Sept. 30, 2012. Debt from BRK's utilities and railroad operations are expected to be self-funding and are excluded from the calculation. On a consolidated basis, debt-to-total capital was 25% as of Sept. 30, 2012.

Consolidated operating interest coverage for the first nine months of 2012 was greater than 8x, which is more consistent with companies in the next lower rating category. Fitch's expectations for companies at BRK's rating level include median interest coverage of 12x. Somewhat offsetting this is approximately $42 billion of cash and equivalents at the holding company and insurance operating companies at Sept. 30, 2012. Debt in BRK's capital structure funds widely different activities, and it is this blended picture that is below Fitch's expectations relative to insurance company peers.

SENSITIVITY/RATING DRIVERS

Key rating triggers that could lead to a future downgrade include:

--Deterioration in the credit quality of key insurance subsidiaries (National Indemnity, GenRe, and GEICO) that is no longer consistent with the current 'AA+' rating. Measures of credit quality include Fitch's judgment of capitalization, a total financing and commitments ratio greater than 1.5x, net leverage (excluding affiliated investments) over 3.5x or a sharp and persistent reduction in underwriting profits;
--A run-rate debt-to-tangible capital ratio from the holding company, insurance and finance operations (including debt issued or guaranteed by the holding company) that exceeds 30%;
--Material increases in leveraged equity market exposure such as its equity index put derivative portfolio;
--Acquisitions or other actions that reduce outstanding cash below $10 billion or approximately 5x consolidated interest expense.

Key rating triggers that could lead to an upgrade include:

--A commitment to lower debt-to-tangible capital ratios attributed to the holding company, insurance and finance operations. Fitch believes that this would likely require the scaling back of the finance operations.

Fitch has assigned the following ratings:

Berkshire Hathaway Inc.
--$300 million 0.8% senior notes due February 2016 'A+';
--$800 million 1.55% senior notes due February 2018 'A+';
--$500 million 3.0% senior notes due February 2023 'A+';
--$1 billion 4.5% senior notes due February 2043 'A+'.

Fitch took no action on the following ratings:

Berkshire Hathaway, Inc.
--Issuer Default Rating (IDR) 'AA-'.
--$1.2 billion floating rate senior notes due Feb. 2013 'A+';
--$1.4 billion 2.125% senior notes due Feb. 2013 'A+';
--$750 million floating rate senior notes due Aug. 2014 'A+';
--$1.7 billion 3.20% senior notes Feb. 2015 'A+';
--$750 million 2.20% senior notes due Aug. 2016 'A+';
--$1.1 billion 1.9% senior notes due Jan. 2017 'A+';
--$500 million 3.75% senior notes due Aug. 2021 'A+';
--$600 million 3.40% senior notes due Jan. 2022 'A+'.

Berkshire Hathaway Finance Corporation (BHFC)
--IDR 'AA-';
--$1 billion 4.6% notes due May 2013 'A+';
--$1 billion 5.0% notes due Aug. 2013 'A+';
--$950 million 4.625% notes due Oct. 2013 'A+';
--$375 million floating rate senior notes due Jan. 2014 'A+'
--$375 million 1.50% senior notes due Jan. 2014 'A+';
--$400 million 5.1% notes due July 2014 'A+';
--$1 billion 4.85% notes due Jan. 2015 'A+';
--$500 million 2.45% senior notes due Dec. 2015 'A+';
--$1,350 million 1.6% senior notes due May 2017 'A+';
--$1.25 billion 5.4% notes due May 2018 'A+';
--$750 million 4.25% senior notes due Jan. 2021 'A+';
--$775 million 3.0% senior notes due May 2022 'A+';
--$750 million 5.750% senior notes due Jan. 2040 'A+'
--$500 million 4.4% senior notes due May 2042 at 'A+'.

GEICO Corporation
--IDR 'AA-';
--$150 million 7.4% senior notes due July 15, 2023 'A+'.

General Re Corporation
--IDR 'AA-'.
--$500 million commercial paper program 'F1+';
--Short-term IDR 'F1+'.

Fitch did not take a rating action on the following insurance subsidiaries that currently carry an 'AA+' Insurer Financial Strength:

--Government Employers Insurance Company;
--General Reinsurance Corporation;
--General Star Indemnity Company;
--General Star National Insurance Company;
--Genesis Insurance Company;
--National Indemnity Company;
--Columbia Insurance Company;
--National Fire and Marine Insurance Company;
--National Liability and Fire Insurance Company;
--National Indemnity Company of the South;
--National Indemnity Company of Mid-America;
--Wesco Financial Insurance Company.

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Additional information is available at 'www.fitchratings.com'. Although BRK's General Reinsurance Corp. subsidiary participated directly in the rating process, BRK did not participate other than through the medium of its public disclosure. The ratings above were unsolicited and have been provided by Fitch as a service to investors.

Applicable Criteria & Related Research:
--'Insurance Rating Methodology' (Oct. 18, 2012).

**Applicable Criteria and Related Research:**
Insurance Rating Methodology — Amended

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MOODY'S
INVESTORS SERVICE

# Credit Opinion: Berkshire Hathaway Inc.

Global Credit Research - 27 Mar 2012

*Omaha, Nebraska, United States*

## Ratings

| Category | Moody's Rating |
|---|---|
| Rating Outlook | STA |
| Senior Unsecured | Aa2 |
| LT Issuer Rating | Aa2 |
| **General Reinsurance Corporation** | |
| Rating Outlook | STA |
| Insurance Financial Strength | Aa1 |
| **National Indemnity Company** | |
| Rating Outlook | STA |
| Insurance Financial Strength | Aa1 |
| **Berkshire Hathaway Finance Corporation** | |
| Rating Outlook | STA |
| BACKED Senior Unsecured | Aa2 |
| **Government Employees Insurance Company** | |
| Rating Outlook | STA |
| Insurance Financial Strength | Aa1 |
| **Finial Holdings, Inc.** | |
| Rating Outlook | STA |
| Senior Unsecured | Baa3 |

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| Robert Riegel/New York City | |
| Enrico Leo/New York City | |


## Key Indicators

**Berkshire Hathaway Inc.[1]**

| | 2011 | 2010 | 2009 | 2008 | 2007 |
|---|---|---|---|---|---|
| Total Assets ($ Mil.) | $ 392,647 | $ 372,229 | $ 297,119 | $ 267,399 | $ 273,160 |
| Unadjusted Debt ($ Mil.) | $ 60,384 | $ 58,574 | $ 37,909 | $ 36,882 | $ 33,826 |
| Adjusted Debt ($ Mil.) | $ 25,338 | $ 22,047 | $ 10,977 | $ 10,964 | $ 7,188 |
| Berkshire Shareholders' Equity ($ Mil.) | $ 164,850 | $ 157,318 | $ 131,102 | $ 109,267 | $ 120,733 |
| Total Equity ($ Mil.) | $ 168,961 | $ 162,934 | $ 135,785 | $ 113,707 | $ 120,733 |
| Total Revenue ($ Mil.) | $ 143,688 | $ 136,185 | $ 112,493 | $ 107,786 | $ 118,245 |
| Pretax Income (Loss) ($ Mil.) | $ 15,314 | $ 19,051 | $ 11,552 | $ 7,574 | $ 20,161 |
| Net Income (Loss) Attrib. to Berkshire ($ Mil.) | $ 10,254 | $ 12,967 | $ 8,055 | $ 4,994 | $ 13,213 |
| Adjusted Financial Leverage | 13.0% | 11.9% | 7.5% | 8.8% | 5.5% |
| Total Leverage, Incl. Guaranteed Amounts | 18.9% | 18.3% | 15.4% | 16.5% | 12.0% |
| Earnings Coverage (1 yr.) | 17.4x | 24.9x | 23.4x | 14.2x | 50.1x |
| Cashflow Coverage (1 yr.) | 10.2x | 11.3x | 13.1x | 15.9x | 16.1x |

[1] Information based on consolidated GAAP financial statements.

## Opinion

### SUMMARY RATING RATIONALE

Berkshire Hathaway Inc. (Berkshire - long-term issuer rating Aa2, short-term issuer rating Prime-1, stable, NYSE: BRKA) is a holding company engaged through subsidiaries in diversified businesses that fall into five broad sectors: insurance and reinsurance ((re)insurance); railroad; utilities and energy; manufacturing, service and retailing; and finance and financial products. Berkshire also holds meaningful minority interests in several publicly traded firms through its portfolio of common stocks, held mainly by its (re)insurance subsidiaries. Berkshire's extraordinary diversification and financial flexibility help the company to absorb fluctuations in particular businesses or markets and to build value over time.

Berkshire's ratings reflect its strong market presence in its principal (re)insurance operations, the diversification of its earnings in both regulated and non-regulated businesses, and its exceptionally strong balance sheet. The ratings also incorporate the conservative operating and financial principles of the current management team. These strengths are tempered by potential earnings and capital volatility within the major (re)insurance operations related to large and concentrated stock investments as well as large individual underwriting transactions. Berkshire also owns certain housing related businesses that face earnings pressure from the weak US housing market. Management succession is another credit concern, given the critical role that CEO Warren Buffett has played in developing Berkshire's culture and financial track record.

OPERATING UNITS: Following is a discussion of Berkshire's major operating units, several of which are rated by Moody's. For more information on the rated businesses, please see the respective operating company credit opinions on Moodys.com.

### Credit Profile of Significant Subsidiaries/Activities

(RE)INSURANCE [Net income $3.7 billion in 2011, $5.2 billion in 2010]

Berkshire's core business is (re)insurance, which generates float to invest in a range of equity and fixed-maturity securities. Float is Berkshire's name for (re)insurance reserves, held from the time premiums are received until some future date, often years later, when the related claims are paid. The (re)insurance operations are divided into four distinct segments: (i) GEICO, the third-largest private passenger automobile insurer in the US, selling mainly through direct response methods; (ii) General Re, a diversified property & casualty and life & health reinsurer serving worldwide clients, mostly on a direct basis; (iii) Berkshire Hathaway Reinsurance Group (BHRG), a strongly capitalized reinsurer writing worldwide excess-of-loss and quota-share coverages, with emphasis on large and unusual risks; and (iv) Berkshire Hathaway Primary Group, a group of smaller insurance businesses that principally write liability coverages for commercial accounts.

GEICO: Moody's Aa1 insurance financial strength (IFS) rating (stable) on Government Employees Insurance Company, lead member of the GEICO group, reflects GEICO's well established brand, efficient and profitable operations, and implicit support from National Indemnity Company (NICO) and Berkshire. These strengths are tempered by persistent competition and intensive regulation in the personal auto insurance line, and by GEICO's aggressive investment style. GEICO holds an unusually high level of common and preferred equities and below-investment-grade bonds, including some large individual investments.

GENERAL RE: The Aa1 IFS ratings (stable) of General Reinsurance Corporation and General Reinsurance AG, leading members of the General Re unit, are based on General Re's strong market presence, favorable underwriting results and profitability, sound capital base, and implicit support from NICO and Berkshire. These strengths are somewhat offset by competitive pressures among global reinsurers, the potential for adverse loss development in long-tail casualty lines, the inherent volatility of catastrophe-exposed business, and the group's practice of holding large stock investments from time to time as part of Berkshire's broader investment strategy.

BHRG: The Aa1 IFS ratings (stable) of NICO and Columbia Insurance Company (Columbia), leading members of BHRG, reflect BHRG's superior capitalization, its unique ability to assume large-limit or super-catastrophe risks, and its expertise in managing long-tail casualty reserves. BHRG faces potential earnings and capital volatility related to large individual (re)insurance risks and investment positions. BHRG moderately increased its writings of catastrophe and individual risk contracts in 2011, after years of declines based on the company's view that pricing for these lines was inadequate. BHRG has the capacity and willingness to write substantially more of this business when it deems pricing to be attractive. Through its retroactive reinsurance book, BHRG is exposed to adverse development of asbestos & environmental and other long-tail liabilities. BHRG holds many of Berkshire's equity investments and some of the group's wholly owned businesses, including its railroad business.

Moody's maintains a Aa1 IFS rating (stable) on Berkshire Hathaway Assurance Corporation (BHAC), a municipal bond insurer managed as part of BHRG. BHAC's rating reflects its sound capitalization, high-quality insured portfolio, a guaranty from Columbia covering all BHAC policies, and implicit support from Berkshire. These strengths are tempered by BHAC's modest returns on equity (largely a function of its strong capital position with low operational leverage), relatively short operating history and limited underwriting and surveillance infrastructure.

RAILROAD [Net income $3.0 billion in 2011, $2.2 billion in 2010 (from acquisition on February 12)]

In February 2010, Berkshire acquired the remaining 77.5% of Burlington Northern Santa Fe Corporation that it did not already own. The railroad was merged into a subsidiary of NICO, which was renamed Burlington Northern Santa Fe, LLC (BNSF). To facilitate the merger, Berkshire made a capital contribution to NICO of about $22.5 billion, consisting of cash and equivalents, short-term investments and Berkshire common stock.

BNSF owns one of the largest railroad systems in North America, serving the Midwest, Pacific Northwest, Western, Southwestern and Southeastern regions and ports of the country. BNSF's A3 senior unsecured debt rating (stable) reflects its superior market position and rail network, supporting our expectations of strong cash flow, steady revenue growth and continued low operating costs. The ratings also reflect the benefits of Berkshire ownership, which allows for relatively conservative financial policies. These strengths are tempered by the risk of adverse regulation in the form of pricing constraints and/or investment requirements.

UTILITIES AND ENERGY [Net income $1.2 billion in 2011, $1.1 billion in 2010]

The utilities and energy sector comprises a large and diversified portfolio of mostly regulated electric and natural gas utilities as well as pipeline and distribution businesses across much of the US and the UK. These operations are held through MidAmerican Energy Holdings Company (MidAmerican), which is 89.8% owned by Berkshire. Moody's maintains a Baa1 senior unsecured debt rating (stable) on MidAmerican, reflecting the company's healthy geographic and business diversification along with explicit and implicit support from Berkshire. These strengths are tempered by the company's significant financial leverage (including non-recourse debt of subsidiaries and projects) and by ongoing capital expenditure requirements.

MANUFACTURING, SERVICE AND RETAILING [Net income $3.0 billion in 2011, $2.5 billion in 2010]

The manufacturing, service and retailing sector can be grouped into five distinct segments: Marmon Holdings, Inc. (approximately 140 manufacturing and service businesses, 80.2% stake held by Berkshire), McLane Company (wholesale distribution of groceries and non-food items), other manufacturing (building products, apparel, leisure vehicles, metal cutting tools, and numerous other consumer and commercial products and related services, including The Lubrizol Corporation (Lubrizol), acquired in September 2011), other service (flight services, news services, direct sales of kitchen tools, prepared foods, and distribution of electronic components), and retailing (home furnishings, jewelry and candies).

These businesses generate well diversified cash flows and are generally not subject to regulatory constraints on the payment of dividends to their respective parent companies. All of these business segments achieved growth in revenues and earnings during 2011, although certain building products units continue to struggle with the weak US housing market. As a whole, we regard the credit profile of the manufacturing, service and retailing sector as solidly investment-grade.

FINANCE AND FINANCIAL PRODUCTS [Net income $516 million in 2011, $441 million in 2010]

The finance and financial products sector mainly engages in proprietary investing strategies, commercial and consumer lending, and transportation equipment and furniture leasing. Most of the finance receivables are consumer installment loans generated by Clayton Homes, Inc. and secured by manufactured homes. Clayton Homes' results have been negatively affected by the soft US housing market and by government policies that favor financing for site-built homes as opposed to manufactured homes. Lower earnings at Clayton Homes were offset by higher earnings in the leasing businesses during 2011. The Clayton Homes portfolio is funded through borrowings by Berkshire Hathaway Finance Corporation (backed senior unsecured debt Aa2, stable), supported by a guarantee from Berkshire.

INVESTMENTS AND DERIVATIVES [Net losses $521 million in 2011, net gains $1.9 billion in 2010]

Investment and derivative gains/losses can fluctuate considerably from period to period. Investment gains/losses are driven largely by the timing of securities sales. These sales usually have little, if any, impact on shareholders' equity because most equity and fixed-maturity securities are carried at fair value with unrealized gains/losses included in equity as a component of accumulated other comprehensive income.

Berkshire's derivative activities include equity index put options and credit default swaps, generally written in 2004-2008, whereby the company has assumed specified amounts of market risk from counterparties. The derivatives portfolio also includes hedging transactions for the railroad, utilities and energy businesses. Berkshire is opportunistic in its derivative writings, such that the mix of premiums and exposures can change materially from one period to the next. When Berkshire enters into a derivative contract to assume market risk, the company typically receives its full premium up front, to be invested over the life of the transaction. The invested premiums are analogous to float in Berkshire's (re)insurance operations.

The equity index put options, written against major worldwide indices, generally expire 15 or more years from inception and may not be exercised until maturity. The credit default swaps include contracts written against corporate credits (indices or individual names) maturing five years from inception, as well as contracts against state and municipal credits (multiple names) with a weighted average contract life of 9.3 years at year-end 2011. Derivatives have heightened the volatility in Berkshire's earnings and capital base in recent years, reflecting fluctuations in the relevant equity indices and in corporate bond default rates. A majority of Berkshire's derivative contracts contain no collateral posting requirements. The company had posted $238 million of collateral with counterparties as of year-end 2011. As of that date, Berkshire estimated that downgrades of its senior debt ratings below either A3 by Moody's or A- by Standard & Poor's could prompt additional collateral posting requirements of up to $1.1 billion. We believe that Berkshire manages its derivative activities to generate favorable expected returns over the long term, while limiting its collateral posting requirements and probable maximum loss to affordable levels.

OTHER/ELIMINATIONS [Net losses/costs $665 million in 2011, $337 million in 2010]

These costs include interest expense not allocated to business segments as well as corporate eliminations to reconcile total segment net income to consolidated net income.

### Credit Strengths

Credit strengths/opportunities of the group include:

- Strong market presence in principal (re)insurance operations and in many other businesses

- Highly diversified profits and cash flows in both regulated and non-regulated industries

- Superior capitalization and liquidity

### Credit Challenges

Credit challenges/risks include:

- Potential earnings and capital volatility within the major (re)insurance operations related to large and concentrated stock investments as well as large individual underwriting transactions

- Housing related businesses constrained by the weak US housing market

- Management succession risk in light of the vital role played by Mr. Buffett

### Rating Outlook

The rating outlook is stable, based on our expectation that Berkshire will continue to generate strong and diversified earnings and cash flows while maintaining a conservative financial profile and ample cash balances.

What to watch for:

- Further sizable acquisitions and equity investments, albeit with (re)insurance remaining the largest business sector

- Continuing conservative financial profile

- Eventual leadership transition, including separation of chief executive and investment management roles currently handled by Mr. Buffett

**What Could Change the Rating - Up**

Factors that could lead to an upgrade include:

- Improvement in the stand-alone credit profiles of various operating units across the major business sectors; along with

- Continued holdings of large cash and equivalent balances at the parent company or immediately available to the parent.

**What Could Change the Rating - Down**

Factors that could lead to a downgrade include:

- Deterioration in the stand-alone credit profile(s) of one or more major operating units;

- A shift toward a less conservative financial profile (e.g., adjusted financial leverage exceeding 15% or total leverage exceeding 20%);

- Losses from insurance underwriting, investments and/or derivatives causing a 20% decline in shareholders' equity in a given year; or

- A significant decline in cash and equivalents on hand (e.g., approaching $10 billion or less).

**Notching Considerations**

Berkshire's Aa2 long-term issuer rating is one notch below the IFS ratings of its major (re)insurance operations and equal to the intrinsic credit profiles of some of those operations. In contrast, most US insurers have a differential of three notches between the operating company IFS rating(s) and the parent company senior rating. The narrower notching in Berkshire's case is based on the firm's extraordinary business diversification and financial flexibility.

**Recent Results**

Net income attributable to Berkshire declined to $10.3 billion in 2011 from $13.0 billion in 2010, mainly reflecting higher catastrophe losses (after-tax losses of $1.7 billion in 2011 versus $600 million in 2010) and an adverse swing in investment and derivative gains/losses (after-tax losses of $521 million in 2011 versus gains of $1.9 billion in 2010). Shareholders' equity attributable to Berkshire increased by about 5% during 2011 to $165 billion at year-end, reflecting earnings during the period partly offset by a decline in the net unrealized appreciation of investments.

**Capital Structure and Liquidity**

Berkshire has exceptionally strong capitalization and liquidity, with a large equity base, moderate financial leverage, strong cash flow and significant cash and equivalents on hand.

BORROWINGS: Total borrowings as of year-end 2011, amounted to $60.4 billion, divided into three categories: $32.6 billion in the railroad and utilities and energy sectors, $14.0 billion in the finance and financial products sector, and $13.8 billion in the (re)insurance and other sectors.

Debt of the railroad, utilities and energy sectors includes $12.7 billion issued by BNSF, $5.4 billion issued by MidAmerican and $14.6 billion of debt issued by MidAmerican subsidiaries, including some project debt. The debts of these sectors are not guaranteed by Berkshire and are largely serviced by regulated cash flows. We believe that BNSF, MidAmerican and their subsidiaries have sufficiently strong and diversified cash flows to service their own debts. Nevertheless, Berkshire has committed through February 2014 to provide up to $2 billion of additional capital to MidAmerican to repay its debt obligations or to fund its regulated utility subsidiaries.

Within the finance and financial products sector, debt is used to fund reasonably matched books of relatively liquid assets. A majority of this debt is guaranteed by Berkshire, although we expect the debt to be serviced by and ultimately liquidated through interest and principal payments on the related assets.

LEVERAGE AND COVERAGE: When comparing insurance oriented holding companies, Moody's makes certain adjustments to financial leverage, such as treating under-funded pension liabilities as debt equivalents, treating operating leases as capital leases, and excluding debt of operating subsidiaries that have reasonably matched assets (e.g., finance-type operations) or, in the case of BNSF and MidAmerican, regulated cash flows that can service the debt. Berkshire's adjusted financial leverage increased to 13.0% at year-end 2011, from 11.9% at year-end 2010, largely reflecting $1.6 billion of debt acquired (and guaranteed) by Berkshire through its purchase of Lubrizol.

Berkshire's total leverage ratio, which incorporates the guaranteed debt of the finance and financial products sector, increased to 18.9% at year-end 2011, from 18.3% at year-end 2010, reflecting the addition of the Lubrizol debt partly offset by a decline in finance and financial products debt. We expect Berkshire to keep its adjusted financial leverage below 15% and total leverage below 20%.

Adjusted pretax interest coverage (averaging 26x over the past five years) and dividend capacity coverage (averaging 13x) remain strong. Dividend capacity coverage measures the total dividends payable by insurance subsidiaries without prior regulatory approval relative to the firm's adjusted interest expense. For 2012, Berkshire's insurance subsidiaries have dividend capacity of approximately $9.5 billion without prior regulatory approval.

LIQUIDITY: At year-end 2011, Berkshire held cash and equivalents totaling $37.3 billion, a majority of which was on the books of insurance operating companies, with lesser amounts held by the parent company and other business units. As an element of its financial profile, Berkshire has pledged to hold at least $10 billion in cash and equivalents at or readily available to the parent company, and typically the available amount is $20 billion or more.

In addition to its cash on hand, Berkshire generates strong cash from operations, averaging $18.1 billion per year over the past three years. Some of this cash is earmarked for capital expenditures, particularly in the railroad and utilities and energy sectors. We believe that each business sector generates sufficient cash to service its own debt obligations. Moreover, there is ample dividend capacity from regulated and unregulated subsidiaries to cover the direct and contingent obligations of the parent company.

SHARE REPURCHASE PROGRAM: In late September 2011, Berkshire's board of directors authorized the company to repurchase common shares at prices no higher than a 10% premium over book value. The program is expected to continue indefinitely and does not specify any minimum or maximum number or dollar amount of shares to be repurchased. Berkshire plans to use cash on hand to fund repurchases, and will not pursue repurchases that would reduce its consolidated cash and equivalent balances below $20 billion. As of year-end 2011, the company had repurchased shares worth approximately $67 under this program. We expect the company to manage the program so as to protect its exceptional financial strength and liquidity.

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MOODY'S INVESTORS SERVICE

ISSUER COMMENT

# Heinz Acquisition Is Credit Negative

From Credit Outlook

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H.J. Heinz Company (Baa2 review for downgrade) on 14 February said it had agreed to be acquired by Berkshire Hathaway Inc. (Aa2 stable) and private-equity firm 3G Capital (unrated) in a transaction valued at $28 billion. The deal is credit negative for Heinz because it will significantly increase its financial leverage and jeopardize its investment-grade ratings. We put Heinz's ratings on review for downgrade the same day.

Based on our adjustments, we estimate that the proposed acquisition will leave the ketchup maker burdened with $14-$22 billion of debt and debt-like instruments, compared with $6.5 billion today. We estimate that the additional debt will raise pro forma debt-to-EBITDA leverage to at least 6x from 3x currently, and could be as high as 10x after accounting for any debt-like features of preferred stock that will be issued as part of the deal. With leverage set to at least double, Heinz's current Baa2 rating, which is our second-lowest investment-grade rating, could be subject to a downgrade of several notches. Further, higher debt-service costs and the 9% dividend on $8 billion of preferred stock that will be issued to Berkshire will pressure cash flow at Heinz.

The pairing of Berkshire CEO Warren Buffett, the renowned buy-and-hold investor, with a private-equity firm might seem an odd coupling, given the propensity of private-equity sponsors to maintain high leverage and opportunistically exit their investments. Although 3G, led by Brazilian billionaire Jorge Paulo Lemann, has a strong reputation as a cost-cutter, it has been known to set aside the private-equity playbook by paying down the leverage it uses to make acquisitions and holding portfolio companies for years.

For Berkshire itself, the Heinz transaction is credit neutral. The deal fits Berkshire's pattern of making large individual investments, which can expose it to earnings or capital volatility. This credit risk is tempered by the company's large capital base, its $48 billion of cash on hand as of 30 September 2012 and its strong, diversified earnings. Although Berkshire has committed to purchase half the common equity of the new Heinz holding company, we regard the overall Heinz transaction as more financial than strategic for Berkshire, similar to its other large equity investments in The American Express Company (A3 stable), The Coca-Cola Company (Aa3 stable), International Business Machines Corporation (Aa3 stable) and Wells Fargo & Company (A2 negative).

What is Moody's Credit Outlook?

Published every Monday and Thursday morning, Moody's Credit Outlook informs our research clients of the credit implications of current events.

Under the terms of the agreement, Heinz shareholders will receive $72.50 in cash per common share, a roughly 20% premium to Heinz's closing share price the day before the deal announcement. Berkshire and 3G plan to contribute $12.12 billion and $4.12 billion, respectively, in the form of equity investments that will include preferred stock, common stock and warrants to be issued by the newly formed holding company. We assume that Heinz's $1 billion in cash will remain on the balance sheet to fund working capital. The purchasers have arranged $14.1 billion of senior secured financing, with two banks to fund the remainder of the purchase price and to pay transaction fees.

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# Berkshire Hathaway Inc.

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# Berkshire Hathaway Inc.

## Major Rating Factors

| Counterparty Credit Rating |
|---|
| *Local Currency* |
| AA+/Negative/A-1+ |

**Strengths:**

- Extremely strong competitive position, supported by a highly diversified business mix
- Experienced and focused management team
- Very strong operating performance
- Very strong consolidated capitalization, based on the historical retention of all earnings within the company
- Very strong liquidity
- Very strong financial flexibility

**Weaknesses:**

- Exposure to equity and credit markets volatility through derivative contracts
- Insurance and reinsurance capitalization, as measured by Standard & Poor's capital adequacy model, is below the current rating level
- The insurance subsidiaries' very high tolerance for equity markets exposure and resulting capital volatility, as well as for large illiquid investments in affiliated companies
- Management succession risk

## Rationale

The counterparty credit rating on Berkshire Hathaway Inc. (BRK) reflects our view of the company's extremely strong competitive position, very strong earnings, very strong liquidity, and conservative financial leverage and coverage metrics. In Standard & Poor's Ratings Services' view, BRK's high tolerance for equity investment risk and the resulting volatility in insurance company statutory capital somewhat offset these factors. Other rating weaknesses include capital adequacy at the insurance operating companies that--as measured by our capital adequacy model--is below what we typically expect at the current rating category, as well as the issue of management succession.

We believe that BRK has an extremely strong and well-diversified competitive position. BRK is a unique holding company that owns a large number of insurance and noninsurance subsidiaries. BRK's core business is its extensive insurance operations, which include Berkshire Hathaway Reinsurance Group, GEICO Insurance Group, General Re Group, and Berkshire Hathaway Primary Group (together, the Berkshire Hathaway Insurance Group). Unlike many of its competitors, BRK's insurance and reinsurance operations historically have maintained pricing power, have demonstrated strong management through cycles, and have created distribution and underwriting competitive advantages in a predominantly commodity-type business. The group's exceptional underwriting results are a testament to these competitive advantages.

The noninsurance subsidiaries operate in a variety of sectors, including utilities and energy, freight railroad transportation, consumer finance, and a wide variety of manufacturing, retailing, and business services. The more prominent noninsurance affiliates (based on earnings contributions) are the separately rated Burlington Northern

Santa Fe LLC (BNSF) and MidAmerican Energy Holdings Co. (MEHC). Standard & Poor's also separately rates Clayton Homes Inc.

BRK's operating performance has generally been very strong, in our opinion. In the first nine months of 2011, pretax operating income (PTOI) rose 0.8% to $12.8 billion, putting the company on track to finish the year close to the $17.3 billion earned in 2010, which was a record year. Earnings benefited from the acquisition of BNSF in February 2010 and a rebound in earnings in many of its manufacturing, service, and retail (MSR) operations as general economic conditions have improved.

We believe that BRK's consolidated capitalization is very strong. BRK is one of the largest corporations in the U.S., with shareholders' equity of $160.0 billion as of Sept. 30, 2011. This is up modestly from $157.3 billion at year-end 2010. The company's very strong historical earnings and its practice of not returning capital to shareholders in the form of dividends or, until recently, share repurchases have enabled it to increase shareholders' equity substantially.

We view BRK's liquidity as very strong, primarily as a result of strong cash flow from operations and, for the holding company, the dividend paying capacity of BRK's numerous insurance and noninsurance operations. BRK also maintains a significant amount of cash and liquid investments at the holding company, which we view as important given the company's commitment to provide liquidity support for two large commercial paper programs and other potential short-term liquidity requirements.

We consider BRK's financial flexibility to be very strong. Its adjusted financial leverage as of Sept. 30, 2011, was, in our view, conservative at 13.6%. Fixed-charge coverage declined somewhat to 21x in the first nine months of 2011 from 35x in 2010, but it remains extremely strong.

Partially offsetting these strengths is a very high tolerance for equity market exposure, which leads to statutory capital volatility for the insurance operations. As equity markets plunged in 2008 and 2009, the combined statutory capital for BRK's U.S. insurance operations declined from $62.0 billion at year-end 2007 to about $44 billion as of March 31, 2009, before rebounding to approximately $64 billion at year-end 2009. Another factor that hurts our view of insurer capital adequacy is BRK's appetite for large acquisitions funded primarily through its insurance operations. BRK also has significant equity markets exposure outside the insurance operations through its large portfolio of long-dated equity index put contracts.

The absolute level of statutory capital at the insurance operations has recovered to the levels reached before the economic downturn. However, the investment risk associated with the equity securities the insurance companies hold, along with the substantial investments in noninsurance affiliates (most recently the $5.9 billion of intercompany loans to help fund the purchase of Lubrizol), reduces insurance and reinsurance capital adequacy, as measured by our capital model, to below what we expect at the current rating category. Generally, it is our view that management has a high tolerance for capital volatility and investment risk.

We view management succession as a key issue for BRK. This stems from our view that CEO Warren Buffet almost exclusively handles certain critical corporate responsibilities, including investments, acquisitions and strategic direction, and capital management. The company's board has approved a CEO succession plan, and the operating companies have experienced management teams. Moreover, Mr. Buffett has hired two investment specialists to assist him in managing the group's investments. However, given Mr. Buffett's extremely strong track record and intimate understanding of all aspects of BRK's operations, as well as the lack of a more-developed corporate infrastructure, we believe this succession plan only partially mitigates the uncertainties surrounding BRK's prospective franchise.

## Factors Specific To Holding Company

The long-term rating on BRK is the same as the ratings on its core operating insurance companies, reflecting the substantial diversity of businesses, the dividend paying capacity of BRK's numerous noninsurance operations, and the substantial amount of cash and investments held at the holding company level. In addition, BRK has noncore operations that it could sell if it unexpectedly needs liquidity or capital, though we would expect this to occur only under extreme circumstances.

BRK's actual parent company cash requirements historically have been low. The company pays no dividends to its common shareholders. Until recently, the company did not repurchase its own stock. However, in September 2011 the Board approved a share repurchase program that permits the company to repurchase shares, but only if the stock is trading at or below 110% of book value. The program has no specific authorization amount or expiration date. So far the amount of shares repurchased has been minimal. The general lack of pressure to take short term actions to boost the share price or return capital to shareholders is, in our view, a key ratings strength because it enables the company to preserve cash and increase capital more rapidly.

Historically, debt service requirements at the holding company level have been minimal, but they increased significantly in 2011 following the issuance of $8 billion of senior notes issued in February 2010 to help fund the acquisition of BNSF. The increase in debt service requirements reflected an aggressive repayment schedule with maturing principal of $2.0 billion in 2011, $1.7 billion in 2012, $2.6 billion in 2013, and $1.7 billion in 2015. However, the company decided to take advantage of the low interest rate environment by funding the 2011 and 2012 maturities by issuing new senior notes of an equal amount, so total debt outstanding has not changed.

The parent company maintains a significant amount of cash and equivalents, though the amount has varied in recent years ($6.6 billion at year-end 2010, $6.0 billion at year-end 2009, $2.9 billion in 2008, $3.4 billion in 2007, and $1.7 billion in 2006). The higher amount at year-end 2009 partly reflected the accumulation of cash to help pay for BNSF, which closed in February 2010.

The insurance subsidiaries have been the parent's predominant source of cash, and we expect that this will continue. Each domestic insurance subsidiary is regulated by the insurance commissioner of the state in which it is domiciled. In 2011, the insurance companies had the ability to upstream up to $9 billion of dividends without seeking prior approval from the insurance commissioners, $7 billion in 2010, $9 billion in 2009, $6.6 billion in 2008, $6.4 billion in 2007, and $6.7 billion in 2006. Actual dividends have varied considerably but have generally been below the permissible amount. The U.S. insurance operations paid $4.4 billion to BRK in 2010, $1.9 billion in 2009, $8 million in 2008, $5.5 billion in 2007, and $7.2 billion in 2006. The noninsurance companies have paid dividends of about $1 billion per year to BRK for the past few years. BNSF is a new source of dividends, though the dividends will fall within the insurance regulators' restrictions on ordinary dividends because the insurance operations own BNSF.

In addition to servicing its own debt, the holding company has several other liquidity and capital commitments. Potential longer-term liquidity requirements include:

- BRK's guarantee of approximately $12 billion of long-term debt that downstream holding company Berkshire



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Hathaway Finance Corp. (BHFC) issued. Clayton Homes uses the proceeds to fund the mortgage loans it makes to the buyers of its manufactured housing units.

- BRK guarantees approximately $1.4 billion of long-term debt Lubrizol issued, which BRK guaranteed upon the closing of its purchase of Lubrizol in September, 2011. The holding company also guarantees various bank credit facilities extended to its subsidiaries and a $400 million note XTRA Finance Corp. issued.
- BRK has committed until Feb. 28, 2014, to provide up to $2.0 billion of additional capital to MEHC to allow the repayment of its debt obligations or to fund its regulated utility subsidiaries. We understand that the agreement cannot be used to fund MEHC acquisitions, and Berkshire has up to 180 days to fund an MEHC equity request.
- BRK guarantees the derivative contracts (equity put options and credit default swap contracts) entered into by its BH Finance LLC subsidiary. The equity put contracts are all European-style options, meaning that no cash payments occur until the contracts expire.

Potential short-term liquidity requirements include:

- BRK guarantees the borrowings of NetJets under its $1.4 billion commercial paper program. BRK also guarantees the borrowings under two much smaller inactive commercial paper programs--a $300 million program for XTRA Inc. and a $150 million program for R.C. Willey.
- BRK guarantees and provides liquidity support for a $2.5 billion commercial paper program its 50%-owned subsidiary, Berkadia Commercial Mortgage LLC, started in January 2011. Berkadia will use borrowings under this program primarily to take advantage of the arbitrage opportunity of issuing 'A-1+' rated short-term debt and investing in lower-rated longer-term investments that have higher yields.
- Some of the BH Finance equity put contracts have collateral posting requirements that go into effect if changes in either the fair value or intrinsic value of the contracts occur, or if the ratings on BRK are lowered. As of Sept. 30, 2010, Berkshire's collateral posting requirement under such contracts was approximately $69 million, compared with about $650 million on June 30, 2009. If Standard & Poor's or Moody's were to lower its ratings on Berkshire to below 'A-'/'A3', up to $1.1 billion of additional collateral would be required.
- BRK guarantees payment of all credit default swaps that BH Finance enters into. The credit default contracts on high yield indices resulted in loss payments—$1.5 billion in 2009—but the losses so far have been below the premiums received. These contracts expire by 2013.

## Outlook

The outlook on the rating is negative for two reasons. One is the sovereign rating cap of 'AA+/Negative', which applies to the obligations of the U.S. government, government-related enterprises, and U.S. financial services firms. We would lower the BRK rating if we downgrade the U.S. We could also lower the rating if the capital adequacy of its insurance operations relative to its risk profile deteriorates as a result of a material increase in investment risk exposure or the funding of a large acquisition by the insurance companies. We do not expect to raise the ratings in the intermediate term given the sovereign rating cap and because insurance capital adequacy is below our expectations for the current rating level. We believe that the competitive position of BRK's reinsurance operations is highly dependent on its level of capitalization.

We expect BRK's PTOI to be above $17 billion in 2012, assuming a continuation of the gradual economic recovery in the U.S., a return to a more normal level of catastrophe losses, and the contribution to earnings of recently acquired Lubrizol. We also expect an adjusted ROR (excluding McLane) of 15%-17%.

In the absence of a sizable natural or man-made catastrophe event, we expect insurance capital adequacy (as measured by our capital adequacy model) to remain below the rating level in 2012, primarily because increased holdings of unaffiliated equities will lead to higher asset-related capital charges notwithstanding the redemption of certain preferred share holdings. Capital adequacy will benefit in 2013 from the termination of the 20% Swiss Re quota share agreement, which will reduce the amount of capital required to support underwriting and catastrophe risk. However, BRK acquisitions that use funding from the insurance operations to cover a part or the entire purchase price could offset this. In our view, earnings and capital could remain volatile, given the insurance operations' exposure to another downturn in the equity markets and, to a lesser extent, to potentially sizable natural or man-made catastrophes. We expect financial leverage and coverage metrics to remain near current levels, absent a large acquisition that requires significant new outside borrowings.

## Competitive Position: Benefits From A Highly Diverse Business Mix

We view BRK's competitive position as extremely strong, benefiting from a very diverse mix of insurance and noninsurance businesses. Through the first nine months of 2011, the company's total operating revenues (revenues excluding investment and derivative gains and losses) rose nearly 6% to $106.7 billion from $99.2 billion. About half of the increase was attributable to BNSF, while the other half came from the MSR segment.

**Table 1**

| Berkshire Hathaway Inc./Selected Statistics | | | | | | | |
|---|---|---|---|---|---|---|---|
| | --As of Sept. 30-- | | --Year ended Dec. 31 -- | | | | |
| **Consolidated Operations (Mil. $)** | **2011** | **2010** | **2010** | **2009** | **2008** | **2007** | **2006** |
| Total revenue | 105,733 | 100,020 | 136,185 | 112,493 | 107,786 | 118,245 | 98,539 |
| Pretax operating income* | 12,802 | 12,679 | 17,271 | 11,099 | 14,195 | 14,859 | 14,313 |
| Return on revenue (%)* | 12.0 | 12.8 | 13.0 | 10.0 | 13.3 | 13.1 | 14.8 |
| Total assets | 385,494 | 363,979 | 372,229 | 297,119 | 267,399 | 273,160 | 248,437 |
| Shareholders' equity | 163,881 | 149,671 | 162,934 | 131,102 | 109,267 | 120,733 | 108,419 |

*Excludes net realized capital gains/(losses).

**Table 2**

| Berkshire Hathaway Inc./Business Statistics | | | | | | | |
|---|---|---|---|---|---|---|---|
| | --As of Sept. 30-- | | --Year ended Dec. 31 -- | | | | |
| **(Mil. $)** | **2011** | **2010** | **2010** | **2009** | **2008** | **2007** | **2006** |
| **Operating revenues*** | | | | | | | |
| Insurance | 27,794 | 27,372 | 35,935 | 33,107 | 30,284 | 36,574 | 28,311 |
| Manufacturing, service & retail | 53,342 | 49,651 | 66,610 | 61,665 | 66,099 | 59,100 | 52,660 |
| Railroad | 14,284 | 10,558 | 15,059 | N.A. | N.A. | N.A. | N.A. |
| Utilities & energy | 8,425 | 8,473 | 11,305 | 11,443 | 12,879 | 12,628 | 10,644 |
| Finance & financial Products | 2,899 | 3,177 | 4,264 | 4,587 | 4,947 | 5,119 | 5,124 |
| Total consolidated | 106,744 | 99,231 | 133,173 | 110,802 | 114,209 | 113,421 | 96,739 |
| **Operating revenues (%)*** | | | | | | | |
| Insurance | 26.0 | 27.6 | 27.0 | 29.9 | 26.5 | 32.2 | 29.3 |
| Manufacturing, service & retail | 50.0 | 50.0 | 50.0 | 55.7 | 57.9 | 52.1 | 54.4 |
| Railroad | 13.4 | 10.6 | 11.3 | N.A. | N.A. | N.A. | N.A. |

**Table 2**

| Berkshire Hathaway Inc./Business Statistics (cont.) | | | | | | | |
|---|---|---|---|---|---|---|---|
| Utilities & energy | 7.9 | 8.5 | 8.5 | 10.3 | 11.3 | 11.1 | 11.0 |
| Finance & financial Products | 2.7 | 3.2 | 3.2 | 4.1 | 4.3 | 4.5 | 5.3 |
| Total | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| **Operating revenue growth (%)** | | | | | | | |
| Insurance | 1.5 | 7.1 | 8.5 | 9.3 | (17.2) | 29.2 | 11.0 |
| Manufacturing, service & retail | 7.4 | 9.4 | 8.0 | (6.7) | 11.8 | 12.2 | 12.3 |
| Railroad | 35.3 | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. |
| Utilities & energy | (0.6) | 0.7 | (1.2) | (11.1) | 2.0 | 18.6 | N.A. |
| Finance & financial products | (8.8) | 3.5 | (7.0) | (7.3) | (3.4) | (0.1) | 12.4 |
| Total | 7.6 | 20.4 | 20.2 | (3.0) | 0.7 | 17.2 | 25.7 |

*Excludes net realized gains/(losses) on investments and derivative contracts. N.A.--Not available.

## Insurance and reinsurance

BRK's core business is its extensive personal and commercial property/casualty (P/C) insurance and reinsurance operations, which include the following generally accepted accounting principles (GAAP) reporting segments: Berkshire Hathaway Primary Insurance Group (BHIG), Berkshire Hathaway Reinsurance Group (BHRG), GEICO Insurance Group (GEICO), and General Re Group (General Re). National Indemnity Co. (NICO) is the lead entity within BHIG and BHRG, and it owns GEICO. NICO also provides quota-share reinsurance support to Gen Re. We view all of these insurance operations as core to BRK because of their close ties to each other and their critical importance to BRK's earnings, liquidity profile, and investment/acquisition strategy.

BRK's leadership in the U.S. personal automobile insurance market and the global reinsurance market supports its very strong competitive position in the insurance market. A low expense structure provides it with a sustainable competitive advantage, in our view, particularly in the case of GEICO, which is the leading direct marketing insurer of personal lines in the U.S.

In the first nine months of 2011, the insurance segment's operating revenues totaled $27.8 billion, up 1.5% from the same period in 2010, mainly because of growth in GEICO's premiums. Insurance provided 26% of BRK's total operating revenues, a slight decline from 28% in 2010 and 30% for full year 2009 because of the inclusion of BNSF beginning in February 2010. From an earnings perspective, insurance remains the most important business segment for BRK, contributing 32% of PTOI in the first nine months of 2011. The recovery of business in the MSR segment and acquisition of BNSF have made BRK less dependent on its insurance business.

The largest source of net premiums earned (NPE) in the insurance segment is GEICO, which had $11.4 billion of premiums in the first nine months of 2011 (47% of total NPE, up from 45% in 2010). GEICO is the largest provider of personal auto insurance through direct channels in the U.S. (Internet and telephone), and, in 2008, it became the third-largest personal automobile insurer in the U.S. as measured by premium volume (behind State Farm and Allstate). GEICO has spent heavily on advertising to build its brand name, and it has been steadily gaining market share as an increasing number of personal automobile insurance buyers have switched from traditional distribution networks of independent and tied agents to direct channels.

GEICO maintains pricing power and is a leader in its market because of its low-cost expense structure. The company has built a highly sophisticated technological platform to sell and manage policies using direct channels.

Other personal automobile providers with higher-cost, traditional distribution networks to support cannot easily replicate GEICO's direct distribution channel. GEICO does not assume any homeowners' underwriting risk, so its catastrophe exposure is minimal.

BHRG produced $7.1 billion of NPE in the first nine months of 2010 (31% of total NPE), down modestly from $7.3 billion in the same period in 2010. NICO is the largest reinsurer in the U.S. based on its gross premiums written of about $4.1 billion in the first nine months of 2011 (according to the Reinsurance Assn. of America). Its statutory policyholder surplus of about $87.2 billion as of Sept. 30, 2011, dwarfed all other U.S. reinsurers. NICO's ownership of GEICO and BNSF, which together add up to about half of NICO's surplus, substantially boosts the company's reported surplus. NICO has benefited from pricing power within its natural catastrophe, terrorism, and retroactive reinsurance lines because of its sizable capital base, its ability to absorb volatility, and the absence of shareholder pressure to produce higher short-term quarterly earnings. NICO targets and offers coverage to other insurance and noninsurance companies seeking capital relief or looking to reduce earnings volatility, and it usually commands rates well above the market averages. The size of NICO's capital base has allowed it to opportunistically underwrite numerous large, retroactive reinsurance policies. The largest of these contracts was the Equitas transaction, which closed in the first quarter of 2007.

General Re is a diverse reinsurance (P/C and life) and insurance (P/C) company with substantial operations and market presence in the U.S. and internationally. In the U.S., General Re was the 11th-largest U.S. reinsurer, based on gross U.S. P/C written premiums of about $900 million through the first nine months of 2011 (according to the Reinsurance Assn. of America), but it was the second-largest (behind NICO) based on its statutory policyholders' surplus of $8.6 billion. In contrast to most reinsurers, General Re has maintained its direct distribution platform, bypassing reinsurance intermediaries. This enables it to maintain better expense margins and data quality than peers that mostly use the broker distribution channel. General Re's $4.2 billion of NPE though the first three quarters of 2011 was 18% of the Berkshire Insurance Group's total NPE.

Berkshire Hathaway's primary insurance group includes a variety of insurers writing commercial lines both on a direct basis and through intermediaries. The largest single component of this group is Medical Protective Co., a leading medical malpractice company in the U.S. This group of companies generated $1.3 billion of NPE in the first nine months of 2011 (5% of total NPE).

### Manufacturing, service, and retail

The MSR group of subsidiaries, which encompasses more than 60 different businesses, generated 50% of BRK's revenues in the first nine months of 2011. However, we believe the revenues of distribution firm McLane Co. somewhat distort this segment's revenues. McLane books the value of the goods it ships as revenue and accounts for almost half of the MSR segment's total revenues. These operations have been a consistent though relatively modest source of dividends to the parent company.

BRK owns 80% of Marmon Holdings Inc., a private company consisting of 130 manufacturing and service businesses. BRK increased its ownership stake from 64% in the first quarter of 2011. Marmon is the largest individual contributor to the MSR segment's PTOI (about 20%). McLane is a nationwide wholesale distributor that provides grocery and non-food products to retailers, convenience stores and restaurants. McLane maintains a competitive advantage as a national distributor, with long-term relationships and information technology (IT) systems that are electronically linked with its customers. Consequently, it has a very high customer retention rate.

Other large operations include Shaw Industries, the world's largest manufacturer of tufted broadloom carpet; Iscar

Metalworking Cos. (IMC), an Israeli machine tool manufacturer; and Fruit of the Loom, an apparel producer.

## Railroad

The railroad business segment consists of BNSF, which BRK acquired on Feb. 12, 2010, and which is included in BRK's financial statements as of that date. BNSF operates the second-largest freight rail network in North America. Most of its track is in the western half of the U.S., where its main competitor is Union Pacific. Its revenues of $14.3 billion represented over 13% of BRK's total operating revenues in the first nine months of 2011. BNSF's revenues were up 16% from the same period in 2010, reflecting fuel surcharges to offset higher fuel costs and a 3% increase in car loads. The company maintains strong positions in upper Midwest grain traffic, Wyoming- and Montana-based low-sulfur coal transportation, and intermodal (trailer and container) movement. BNSF has a well-diversified traffic base consisting of consumer products--mainly domestic and international intermodal, coal, industrial and agricultural products.

The acquisition of BNSF is BRK's largest to date. Before the transaction, BRK owned about 22% of the stock of BNSF. It financed the $26 billion acquisition of the remaining shares with a combination of 60% cash and 40% in newly issued BRK shares. BRK derived the cash portion of about $16 billion from cash on hand and new debt issuance of approximately $8 billion. BNSF historically has generated operating cash well in excess of capital expenditures and operating needs, and we expect this to remain the case under BRK's ownership. Through Sept. 30, 2011, BNSF generated cash flow from operations of $4.3 billion, and capital expenditures totaled $2.3 billion. Dividends paid to NICO totaled $2.8 billion for the period. We expect BNSF to dividend its free operating cash flow to BRK (via NICO) to help finance future acquisitions.

## Utilities and energy

This business segment consists of BRK's 89.8% interest in MidAmerican Energy Holdings Corp., a diversified energy company. This segment generated $8.4 billion of operating revenues through the first nine months of 2011 (8% of BRK's total).

MEHC's largest businesses include the regulated electric utility PacifiCorp, which serves six states in the Pacific Northwest, and the regulated electric and natural gas utility MidAmerican Energy Co., which operates in Iowa but also serves markets in Illinois, South Dakota, and a small portion of Nebraska. These entities accounted for 41% and 32%, respectively, of MEHC's revenues in the nine months ended Sept. 30, 2011.

MEHC also owns two Federal Energy Regulatory Commission (FERC)-regulated interstate natural gas pipelines: Northern Natural Gas Co., which largely serves local distribution companies in various Midwestern markets (including the Twin Cities), and Kern River Gas Transportation, which provides transportation services to end users in the Southwest and southern California. (We rate Kern River as a project). These pipelines accounted for about 8% of MEHC revenues.

In addition, MEHC's holdings include a U.K.-based electric distribution company, Northern Powergrid Holdings Co., which, in turn, owns operating companies Northern Powergrid (Northeast) Ltd. (NPN), and Northern Powergrid (Yorkshire) PLC (NPY). Northern Powergrid constituted approximately 9% of MEHC's revenues.

The rates that MEHC's utilities, electricity distribution businesses, and natural gas pipelines charge customers for energy and other services are generally subject to regulatory approval. MEHC does not pay dividends to BRK because its cash requirements for ongoing investments in fixed assets are substantial. The company meets these cash requirements through cash generated internally and through outside borrowings ($19.9 billion in long-term debt outstanding as of Sept. 30, 2011) that BRK doesn't guarantee.

MEHC also owns a residential real estate brokerage firm, HomeServices of America Inc., which contributed about 9% of MEHC's revenues.

**Finance and financial products**
This segment consists primarily of Clayton Homes, the largest producer and seller of manufactured housing in the U.S. (BRK includes Clayton in this segment rather than in MSR because of the importance of its home financing activity to the business' earnings.) The segment also includes furniture leasing (CORT) and transportation equipment leasing (XTRA) operations. This segment accounted for 3% of BRK's operating revenues in the first nine months of 2011.

BRK includes its derivative products company--BH Finance LLC--in its finance and financial products segment, though NICO owns BH Finance. BRK guarantees all derivative contracts that BH Finance writes. BH Finance reports its financial results as derivatives gains or losses so it does not affect the segment's operating revenues or PTOI. However, mark-to-market accounting requirements for these contracts have had a significant effect on net income over the past three years.

## Management And Corporate Strategy: Uncertainties Regarding Management Succession

BRK seeks to enhance shareholder value by increasing its per-share book value through internal growth and a very active acquisition strategy. BRK's chairman and CEO, Warren Buffett, may be the world's best-known investor, and his unparalleled access to investment ideas and opportunities over the years has given BRK a key competitive advantage. Mr. Buffett is the company's largest shareholder, with a 22.2% economic interest and 33.8% voting interest in BRK.

The company's growth strategy is to supplement organic growth with frequent acquisitions, funded primarily by the cash its core insurance operations have generated. The company's historical policy of retaining earnings within the company rather than paying dividends to shareholders or engaging in share repurchases greatly assists financing acquisitions with internal funds.

Under Mr. Buffett's leadership, BRK has developed an unrivaled brand name in the U.S. in the insurance, noninsurance, and investment markets. BRK has established itself as an acquirer of choice, and this has given it an informational advantage, in that it has the opportunity to analyze a wide range of potential acquisitions and markets. We expect that as long as BRK's current management team is in place, the company will likely maintain these informational and brand-name competitive advantages. However, because of BRK's size, only large acquisitions have the potential to significantly affect its future earnings.

We view management succession as a key issue for BRK. This stems from our view that CEO Warren Buffet almost exclusively handles certain critical corporate responsibilities, including investments, acquisitions and strategic direction, and capital management. The company's board has approved a CEO succession plan, and the operating companies have experienced management teams. The plan involves splitting Mr. Buffett's operational and investment responsibilities between at least two managers. Mr. Buffett has, in fact, already hired two investment specialists to assist him in managing the group's investments. However, given Mr. Buffett's extremely strong track



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record and intimate understanding of all aspects of BRK's operations, as well as the lack of a more-developed corporate infrastructure, we believe this succession plan only partially mitigates the uncertainties surrounding BRK's prospective franchise.

### Operational

The company's operating structure is decentralized to an unusual extent, in our view, with only minimal corporate staff. With the exception of investments, capital allocation, and the selection of top executives, BRK has no centralized corporate or staff functions. Each company operates on a stand-alone basis. The operating management teams are generally experienced and run their businesses with minimal supervision. Although BRK's corporate culture has always been to hold on to any acquired companies, its structure would make it quite easy for BRK to sell any of its businesses if the need or desire arose.

BRK's management team has created a corporate culture focused on economic profits and, in the insurance operations, price adequacy. These key strategies have permeated the various operating companies as well, and we view the consistency of BRK's culture throughout the organization as a strength to the rating.

### Financial

BRK is conservative, in our opinion, in its use of traditional financial leverage. However, we believe BRK's insurance operations' aggressive balance sheet management partially offsets this. An example of this is the extensive use of insurance company assets to fund acquisitions, which has left BRK's insurance companies holding some large illiquid investments. The largest such holding is BNSF, which is owned by NICO and valued at $35.5 billion. The most recent example is $5.9 billion of intercompany loans from the insurance companies to Lubrizol to help fund BRK's $8.7 billion acquisition of that company. The large holdings of unaffiliated common stocks—about $67 billion as of Sept. 30, 2011—in relatively few names demonstrate management's very high tolerance for equity market volatility risk in the insurance companies' investment portfolios.

## Accounting

Standard & Poor's views BRK's accounting as neutral to the rating. We run our insurance capital adequacy model using reported statutory financial data, but we make adjustments to incorporate natural catastrophe exposure and finite reinsurance.

In calculating financial leverage and coverage for BRK, we remove MEHC and BNSF from the reported consolidated GAAP numbers. We also remove the debt and interest expense associated with the mortgage finance operations of Clayton Homes, treating this as operating leverage rather than financial leverage. We also include the borrowings of Welsh Road Funding LLC, the asset-backed commercial paper program of 50% owned Berkadia Commercial Mortgage LLC guaranteed by BRK.

In analyzing operating performance, we remove investment and derivative contract gains and losses from revenues and pretax income to evaluate revenue growth and the earnings contribution of BRK's business segments, as well as to calculate the ROR.

## Operating Performance: A Diverse Business Mix Keeps Operating Performance Strong

BRK's operating performance has generally been very strong, in our opinion. In the first nine months of 2011, PTOI rose 0.8% to $12.8 billion, putting the company on track to finish the year close to the $17.3 billion earned in 2010, which was a record year. The inclusion of BNSF (which became part of BRK's consolidated financials on Feb. 12, 2010) benefited earnings in both years, as did a rebound in earnings in many of its manufacturing, service, and retail (MSR) operations as general economic conditions improved. These offset weaker earnings from insurance operations, which higher catastrophe losses hampered. Net income fell to $7.2 billion in the first nine months of 2011 from $8.6 billion during the same period in 2010, largely because of a $1.6 billion negative swing in gains/losses on investments and derivatives. The ROR deteriorated slightly to 12% in 2011 from 13% in the previous year. The adjusted ROR, excluding distribution company McLane, remained strong at 15%, though down from over 16% the prior year. McLane has an ROR of 1% because the value of all goods shipped is included in its revenues. BRK's adjusted ROR fell to 14% in 2009 because of the impact of the recession on most of its businesses. Except for the insurance and the finance/financial products segments, segment RORs were back to pre-recession levels for the first three quarters of 2011.

**Table 3**

**Berkshire Hathaway Inc./Operating Statistics**

| | --As of Sept. 30-- | | --Year ended Dec. 31 -- | | | | |
|---|---|---|---|---|---|---|---|
| **(Mil. $)** | **2011** | **2010** | **2010** | **2009** | **2008** | **2007** | **2006** |
| **Consolidated operations** | | | | | | | |
| Total revenues | 105,733 | 100,020 | 136,185 | 112,493 | 107,786 | 118,245 | 98,539 |
| Pretax operating income (excluding realized gains) | 12,802 | 12,679 | 17,271 | 11,099 | 14,195 | 14,859 | 14,313 |
| Investments & derivatives gains/(losses)* | (1,382) | 248 | 2,346 | 787 | (7,461) | 5,509 | 2,635 |
| Net income | 7,206 | 8,590 | 12,967 | 8,055 | 4,994 | 13,213 | 11,015 |
| Return on revenue (%) (excluding realized gains) | 12.0 | 12.8 | 13.0 | 10.0 | 13.3 | 13.1 | 14.8 |
| Excluding McLane (%) | 15.3 | 16.6 | 16.8 | 13.5 | 17.6 | 17.1 | 19.8 |
| Return on average equity (%) | 4.4 | 6.1 | 8.8 | 6.7 | 4.3 | 11.5 | 11.0 |
| **Segment results** | | | | | | | |
| **Insurance** | | | | | | | |
| Pretax operating income (PTOI) | 4,113 | 5,361 | 7,158 | 6,732 | 7,514 | 8,132 | 8,154 |
| Contribution to total PTOI (%) | 32.1 | 42.3 | 41.4 | 60.7 | 52.9 | 54.7 | 57.0 |
| ROR (%) | 14.8 | 19.6 | 19.9 | 20.3 | 24.8 | 22.2 | 28.8 |
| **Manufacturing, service, and retail** | | | | | | | |
| Pretax operating income (PTOI) | 3,678 | 3,186 | 4,274 | 2,058 | 4,023 | 3,947 | 3,526 |
| Contribution to total PTOI (%) | 28.7 | 25.1 | 24.7 | 18.5 | 28.3 | 26.6 | 24.6 |
| ROR (%) | 6.9 | 6.4 | 6.4 | 3.3 | 6.1 | 6.7 | 6.7 |
| ROR excluding McLane (%) | 11.8 | 11.5 | 11.5 | 5.6 | 10.3 | 12.0 | 12.2 |
| **Railroad** | | | | | | | |
| Pretax operating income (PTOI) | 3,271 | 2,577 | 3,611 | N.A. | N.A. | N.A. | N.A. |
| Contribution to total PTOI (%) | 25.6 | 20 | 21 | N.A. | N.A. | N.A. | N.A. |
| ROR (%) | 22.9 | 24.4 | 24.0 | N.A. | N.A. | N.A. | N.A. |

**Table 3**

| Berkshire Hathaway Inc./Operating Statistics (cont.) | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Utilities and energy** | | | | | | | |
| Pretax operating income (PTOI) | 1,260 | 1,149 | 1,539 | 1,528 | 1,871 | 1,774 | 1,476 |
| Contribution to total PTOI (%) | 9.8 | 9.1 | 8.9 | 13.8 | 13.2 | 11.9 | 10.3 |
| ROR (%) | 15.0 | 13.6 | 13.6 | 13.4 | 14.5 | 14.0 | 14 |
| **Finance and financial products** | | | | | | | |
| Pretax operating income (PTOI) | 480 | 406 | 689 | 781 | 787 | 1,006 | 1,157 |
| Contribution to total pretax income(%) | 3.7 | 3.2 | 4.0 | 7.0 | 5.5 | 6.8 | 8.1 |
| ROR (%) | 16.6 | 12.8 | 16.2 | 17.0 | 15.9 | 19.7 | 23 |

*Includes for 2008 the realized gain and fee arising from the termination by Constellation Energy of its merger agreement with MEHC. N.A.--Not available.

In 2009, PTOI fell 22% to $11.1 billion as the recession particularly hurt BRK's MSR operations. However, net income jumped to $8.1 billion in 2009 from $5.0 billion in 2008 because of a huge $8.3 billion positive swing in the valuation of BRK's derivatives portfolio. Despite near-record PTOI of $14.2 billion in 2008, net income fell to $5.0 billion from $13.2 billion in 2007. The deterioration resulted from a $7.5 billion pretax loss on investments and derivatives, compared with a $5.5 billion pretax gain in 2007, stemming from the turmoil in the capital markets in the second half of 2008. These valuation moves highlight the volatility of BRK's reported earnings arising from mark-to-market accounting for its derivatives portfolio.

The insurance segment historically has generated 50% to 60% of BRK's PTOI. This percentage fell to 42% in 2010 and 32% in the first nine months of 2011, mainly because of the inclusion of BNSF, but also as a result of higher catastrophe losses and a sharp rebound in earnings in the MSR operations. Still, we expect the contribution of insurance operations to 40%-50% prospectively. PTOI declined to $4.1 billion in the first nine months of 2011 from $5.4 billion during the same period in 2010. The ROR was 15%, down from 20% for full-year 2010 and well below its pre-recession level of 22% to 25%. Underwriting results for the insurance operations have, in our opinion, been very strong. From 2006 to 2010, the group's U.S. P/C operations reported an average statutory combined ratio of 87%. (The lower the combined ratio, the better the underwriting profitability. A combined ratio of more than 100% signifies an underwriting loss.) The group reported a combined ratio of 89.9% in 2010, despite relatively high catastrophe losses related to earthquakes in Chile and New Zealand that hampered General Re's and NICO's underwriting performance. As in most prior years, this compares quite favorably with the U.S. P/C industry average of 100.8% in 2010 (excluding mortgage and financial guaranty insurers), as reported by the Insurance Services Office.

The MSR segment's PTOI improved by nearly $500 million to $3.7 billion in the first nine months of 2011 and accounted for 29% of total BRK PTOI. Most of the numerous businesses in this segment showed improved earnings. The main exception continues to be the housing related businesses—Shaw (carpets) and Acme Brick both posted lower results. Lubrizol is included in this segment but did not have a significant impact since it was included in segment results for only 15 days. The segment's ROR, excluding McLane, improved to nearly 12% in the first nine months of 2011, bringing this measure back to its pre-recession level after falling to less than 6% in 2009.

The railroad segment was the third-largest contributor to PTOI in the first nine months of 2011. Its PTOI of $3.3 billion represented about 26% of total PTOI. Operating expenses rose faster than revenues (18% versus 16%), resulting in a 1.5 point decline in ROR to 23%, still the highest of any of BRK's business segments.

The utilities and energy segment was the fourth-largest contributor to PTOI in the first nine months of 2010. Its PTOI of $1.3 billion represented 10% of total PTOI, up a point versus the same period in 2009. The ROR improved to 15% from 14%. Improved earnings at the U.K. electric utilities accounted for most of the increase in earnings.

The finance and financial products segment saw its PTOI improve 11% to $480 million in the first three quarters of 2011 and follows a 17% improvement in 2010. This is BRK's smallest business segment, accounting for less than 4% of total PTOI. The ROR improved to nearly 17% from 14%, but it remains below its pre-recession level of about 20%. Clayton Homes' sales and earnings have not recovered as the market for manufactured housing remains depressed.

### Prospective

We expect BRK's PTOI to be above $17 billion in 2012, assuming a continuation of the gradual economic recovery in the U.S. and a return to a more normal level of catastrophe losses. We also expect an adjusted ROR of 15%-17%. Because of the uncorrelated earnings of its operations outside the insurance industry, we believe that BRK should be able to manage soft pricing cycles within its insurance operations better than its peers. Nevertheless, we note that BRK's operating performance is not immune to general economic downturns, as the lower PTOI in 2009 demonstrated.

## Investments: High Equity Exposure And Concentrated Stock Holdings

BRK's investment strategy is unique among insurance groups in that most of its invested assets are in a limited number of stock investments. As of Sept. 30, 2011, the investment portfolios of the insurance operations included $78.2 billion of unaffiliated equity investments, or 46% of total invested assets. In addition, the insurance operations own BNSF, which, at about $35 billion, represented an estimated 21% of total invested assets. The unaffiliated equity investments include (at purchase price) large preferred stock holdings in General Electric ($3.0 billion—redeemed in October 2011), Dow Chemical ($3.0 billion), and Bank of America ($5 billion purchased in September 2011). The company also received $3 billion of General Electric warrants on its common stock at $22.25 per share. A preferred stock holding from Goldman Sachs ($5.0 billion) was redeemed in April 2011, but BRK continues to hold warrants for the purchase of $5 billion of Goldman Sachs' common stock at $115 per share. These warrants expire in 2013. BRK also received warrants in General Electric and Bank of America stock. The company's surplus does not currently benefit from any unrealized gains on these warrants since the market prices are below the strike prices.

Unaffiliated equities and affiliated equities (BNSF) represented 86% and 39%, respectively, of the combined statutory surplus of BRK's insurance operations as of Sept. 30, 2011, or 125% in total.

Fixed-income securities represented 22% of the investment portfolio ($37.0 billion). This includes $1.0 billion of senior notes and $4.4 billion of noninvestment-grade subordinated debentures that Wm. Wrigley issued to help finance its acquisition by private candy producer Mars.

Cash and equivalents of $19.1 billion represented 11% of the insurance group's portfolio. This amount is larger on an absolute basis and accounts for a greater proportion of total investments than is the case for most insurers we rate. However, we believe that the insurance operations need to hold more cash than other insurers to compensate for the significantly below-average allocation to investment-grade fixed-income securities and potential catastrophe loss claims, as well as to provide liquidity support to the holding company.

The insurance operations' net investment income (interest income plus dividends) decreased to $5.2 billion in 2010 from $5.5 billion in 2009, reflecting reduced dividend payments by Wells Fargo, one of BRK's largest equity holdings, and lower

yields available on cash and equivalents. Net investment income declined 7% in the first nine months of 2011, attributable to the redemption of the relatively high yielding Swiss Re capital securities and Goldman Sachs preferred stock.

**Table 4**

**Berkshire Hathaway Inc./Financial Statistics**

| ($ Mil.) | --As of Sept. 30-- | --Year ended Dec. 31-- | | | | |
|---|---|---|---|---|---|---|
| Insurance & MSR segments* | 2011 | 2010 | 2009 | 2008 | 2007 | 2006 |
| Debt to total capital (%) | 13.6 | 11.7 | 5.1 | 6.2 | 3.7 | 5.2 |
| Debt plus preferred (including hybrids) to total capital (%) | 13.6 | 11.7 | 5.1 | 6.2 | 3.7 | 5.2 |
| GAAP interest coverage (x)(EBITDA) | 21.4 | 24.4 | 27.9 | 35.0 | 39.4 | 36.3 |
| GAAP fixed-charge coverage(x)(EBITDA) | 21.4 | 24.4 | 27.9 | 35.0 | 39.4 | 36.3 |
| **Insurance investment portfolio** | | | | | | |
| Cash & equivalents | 19,074 | 24818 | 18,655 | 18,845 | 28,257 | 34,590 |
| Fixed maturity securities** | 36,964 | 38289 | 40,937 | 31,332 | 27,922 | 25,272 |
| Equity securities** | 113,684 | 108,757 | 80,129 | 62,911 | 74,681 | 61,168 |
| Total invested assets | 169,722 | 171,864 | 139,721 | 113,088 | 130,860 | 121,030 |
| Cash & equivalents (%) | 11.2 | 14.4 | 13.4 | 16.7 | 21.6 | 28.6 |
| Fixed maturity securities** (%) | 21.8 | 22.3 | 29.3 | 27.7 | 21.3 | 20.9 |
| Equity securities** (%) | 67.0 | 63.3 | 57.3 | 55.6 | 57.1 | 50.5 |
| Total invested assets (%) | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Statutory capital (Surplus)*** | 90,810 | 94,400 | 64,122 | 50,795 | 61,981 | 59,273 |
| Total equities/Surplus (%) | 125.2 | 115.2 | 125.0 | 123.9 | 120.5 | 103.2 |

*Includes parent company. Excludes Burlington Northern Santa Fe, MidAmerican Energy Holdings, and finance company operations. **Includes securities classified as Other Investments beginning in 2008. Equity securities as of Sept. 30, 2010, includes BNSF at its GAAP equity value per its 10-Q filing. ***For combined U.S. insurance operations.

## Derivative contracts

BRK writes derivatives contracts through its finance and financial products business segment. These contracts consist of equity put contracts, corporate credit default swaps, and municipal credit default swaps, which had notional values of $34.4 billion, $8.4 billion, and $16.0 billion respectively, as of Sept. 30, 2010. The contracts are reported under GAAP accounting rules on a marked-to-market basis, with changes in exposure reported in earnings. This has, in our view, significantly increased earnings volatility.

Most of the earnings volatility stems from the equity index put contracts. We believe that the true economic impact of the contracts will be much lower, based on the long-term nature of these obligations. These contracts will settle many years from now—starting in 2018—and typically will only result in a realized loss if the referenced equity market indices do not recover to the levels they were at when these contracts were written. If the indices do not recover to these levels, which we believe is unlikely, we understand that the loss to BRK would only be the notional amount of the contract multiplied by the percentage the index is below its initial level. BRK has been required to post collateral under the terms of a few of these contracts, but the amounts involved have been modest and have not eroded liquidity.

The corporate credit default swaps portfolio has been more problematic, in our opinion, producing loss payments of $1.9 billion in 2009, up from $152 million in 2008. The company paid another $132 million in the first nine months of 2010. However, we understand that cumulative payments are still well below the premiums received for these contracts. These contracts began expiring in 2010, and the rest will expire by the end of 2013.

## Liquidity: Operating Cash Flows Remain Strong

Liquidity is very strong, in our opinion. The cash position of BRK's insurance operations (discussed in the "Investments" section) accounts for most of BRK's cash holdings. However, the holding company and the MSR operations held about $11.5 billion of additional cash as of Sept. 30, 2011. Senior management historically has said that it would not be comfortable allowing consolidated cash to decline to less than $10 billion, but we believe that the cash position needs to be substantially higher given the company's investment mix, exposure to natural catastrophe losses, and potential holding company liquidity requirements.

BRK's consolidated cash flow from operations has remained very strong, at $17.9 billion in 2010, $15.8 billion in 2009, $11.3 billion in 2008, and $12.6 billion in 2007. The U.S. insurance operations' cash flow has steadily been increasing to $7.2 billion in 2010, from $6.4 billion in 2009 and $5.7 billion in 2008.

## Capitalization: Insurance Operations' Capital Adequacy Is Low For The Rating Level

BRK is one of the largest corporations in the U.S., with shareholders' equity of $160.0 billion as of Sept. 30, 2011. Shareholders' equity rose $2.6 billion from year-end 2010, with lower equity values largely offsetting earnings. The company's very strong historical earnings and its practice of not returning capital to shareholders in the form of dividends or share repurchases have allowed it to increase shareholders' equity substantially over time.

Equity market volatility hurt BRK's consolidated balance sheet and earnings in 2008 and 2009. Shareholders' equity fell from $120.7 billion at year-end 2007 to $102.8 billion as of March 31, 2009, near the low point for U.S. equity markets indices, and then improved to $131.1 billion at year-end 2009. These movements resulted mainly from changes in the market value of the large equity holdings in the insurance operations. Changes in the value of BRK's portfolio of derivative contracts that the finance and financial products segment held contributed to earnings volatility during this period.

The downturn and subsequent rebound in the equity markets in 2008 and 2009 had a more pronounced effect on the insurance operations' statutory capital. The combined statutory capital for all of BRK's U.S. insurance operations declined to $50.8 billion at year-end 2008 from $62.0 billion at year-end 2007. It subsequently fell to about $44 billion on March 31, 2009, before rebounding to about $64 billion at year-end 2009.

We look at the capitalization of BRK's insurance operations across all P/C and life and health insurance and reinsurance subsidiaries--both domestically and internationally--on a consolidated basis. The acquisition of BNSF and the purchase of large preferred stock and noninvestment-grade subordinated debentures have hurt capital adequacy, as measured by Standard & Poor's capital adequacy model. These large and concentrated acquisitions, coupled with higher Standard & Poor's capital model charges for common stock that took effect in 2008 (which we increased in 2010), have resulted in capital adequacy below our expectations for the current rating level. The main factor that offsets the reduced capitalization levels is the very strong competitive position across all of the underwriting segments, which leads to very strong earnings potential.

**Prospective**

Without a sizable catastrophe event, we expect insurance capital adequacy to remain below the rating level in 2012. Capital adequacy will benefit in 2013 from the termination of the 20% Swiss Re quota share agreement, which will reduce the amount of capital required to support underwriting and catastrophe risk, but acquisitions by BRK could offset this.

## Financial Flexibility: Very Strong

We view BRK's financial flexibility as very strong. BRK's diverse businesses, low adjusted financial leverage, extremely strong adjusted interest coverage, and relatively low dependence on external capital markets support our view.

BRK's financial leverage as of Sept. 30, 2011, was, in our view, conservative at 13.6%. This number excludes the debt obligations of MEHC and BNSF (which we rate on a stand-alone basis) and the debt associated with Clayton Homes' mortgage finance operations (which we treat as operating leverage) but includes the commercial paper of 50% owned Berkadia Commercial Mortgage LLC, which is not consolidated for GAAP reporting purposes but is guaranteed by BRK. Fixed-charge coverage declined somewhat to 21x in the first nine months of 2011 from 24x in 2010, but it remains extremely strong.

## Related Criteria And Research

- Berkshire Hathaway Inc.'s Insurance And Reinsurance Companies, March 20, 2012
- Berkshire Hathaway Inc.'s Insurance And Reinsurance Companies, March 4, 2011
- Interactive Ratings Methodology, April 22, 2009

| Ratings Detail (As Of March 23, 2012) | | |
|---|---|---|
| **Berkshire Hathaway Inc.** | | |
| Counterparty Credit Rating | | |
| *Local Currency* | | AA+/Negative/A-1+ |
| Senior Unsecured (27 Issues) | | AA+ |
| **Counterparty Credit Ratings History** | | |
| 08-Aug-2011 | *Local Currency* | AA+/Negative/A-1+ |
| 04-Feb-2010 | | AA+/Stable/A-1+ |
| 04-Nov-2009 | | AAA/Watch Neg/A-1+ |
| 24-Mar-2009 | | AAA/Negative/A-1+ |

*Unless otherwise noted, all ratings in this report are global scale ratings. Standard & Poor's credit ratings on the global scale are comparable across countries. Standard & Poor's credit ratings on a national scale are relative to obligors or obligations within that specific country.

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# Berkshire Hathaway Inc. Four Tranches Of Senior Unsecured Notes Rated 'AA+'

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NEW YORK (Standard & Poor's) Jan. 31, 2013--Standard & Poor's Ratings Services said today that it assigned its 'AA+' senior debt ratings to Berkshire Hathaway Inc.'s (BRK; AA+/Negative/A-1+) $2.6 billion senior unsecured notes. BRK will issue the notes in four tranches: $300 million 0.8% senior unsecured notes due Feb. 11, 2016; $800 million 1.55% senior unsecured notes due Feb. 9, 2018; $500 million 3.0% senior unsecured notes due Feb. 11, 2023; and $1.0 billion 4.5% senior unsecured notes due Feb. 11, 2043. BRK will use the net proceeds of this issuance to repay $2.6 billion of notes maturing on Feb. 11, 2013.

BRK's adjusted debt leverage and interest coverage (excluding the separately rated subsidiaries MidAmerican Energy Holdings Co. and Burlington Northern Santa Fe LLC and the borrowings used to fund the finance operations of Vanderbilt Mortgage & Finance Inc. that are treated as operating leverage) are conservative. BRK's adjusted debt leverage was 12.5% as of Sept. 30, 2012. A like amount of debt matures on Feb. 11, 2013, so there will be no increase in leverage and an immaterial impact on coverage. Adjusted interest coverage for the first nine months of 2012 remained quite strong at about 21x.

The ratings are based on the counterparty credit rating on BRK, which reflects the company's extremely strong competitive position, very strong earnings, very strong liquidity position, and conservative financial leverage and coverage metrics. These factors are offset to some extent, in our opinion, by BRK's high tolerance for equity-investment risk, which has resulted in volatility in the company's insurance subsidiaries' statutory capital and their capital adequacy. Capital adequacy as measured by our capital adequacy model is less than what we typically expect for the rating category. The issue of management succession at BRK is also an offsetting factor.

RELATED CRITERIA AND RESEARCH
Interactive Ratings Methodology, April 22, 2009

RATINGS LIST
Berkshire Hathaway Inc.

| | |
|---|---|
| Counterparty Credit Rating | AA+/Negative/A-1+ |

New Ratings

Berkshire Hathaway Inc.

| | |
|---|---|
| 0.8% sr unsec notes due 2/11/2016 | AA+ |
| 1.55% sr unsec notes due 2/9/2018 | AA+ |
| 3.0% sr unsec notes due 2/11/2023 | AA+ |
| 4.5% sr unsec notes due 2/11/2043 | AA+ |

Complete ratings information is available to subscribers of RatingsDirect on the Global Credit Portal at www.globalcreditportal.com. All ratings affected by this rating action can be found on Standard & Poor's public Web site at www.standardandpoors.com. Use the Ratings search box located in the left column.

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## Bulletin:

# Berkshire Hathaway Inc. Ratings Unaffected By Heinz Acquisition

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NEW YORK (Standard & Poor's) Feb. 19, 2013--Standard & Poor's Ratings Services said today that its ratings on Berkshire Hathaway Inc. (BRK; AA+/Negative/A-1+) and its insurance subsidiaries are unaffected by the announcement that BRK and investment firm 3G Capital have agreed to acquire consumer products company H. J. Heinz Co. in a transaction valued at $28 billion, including the assumption of Heinz's outstanding debt. We expect the transaction to close in third-quarter 2013. Based on our preliminary understanding of the structure and financing of this acquisition, we believe that BRK's insurance capital adequacy, as measured by our proprietary capital-adequacy model, remains on track to improve to the 'AA' level by year-end 2013. However, this transaction significantly reduces the projected capital redundancy from our prior estimate. Moreover, our projection assumes that the equity markets will not experience a major decline from their current levels and that the company will make no additional material acquisitions for the rest of the year.

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# Appendix 3

**Mid American Transmission/RES Canada**
**Ontario Energy Board**
**Cost Model Bid Proposal**
**20/12/2012**

| **Cost Model Type** | AVG |
|---|---|
| **230kV Single ALT H Frame** | A |

| **Item Description** | | **Development Phase** | | | | | | | | **Construction: LTC Review Period** | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | **2013** | | **2014** | | | | **2015** | | | |
| | | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 |
| **Major Contracts** | | | | | | | | | | | |
| Transmission Line Construction/Engineering/Management | $ 80,415,922 | | | | | | | | | | |
| Transmission Line Materials/Equipment | $ 187,637,152 | | | | | | | | | | |
| Planning Studies & Cost Benefit Analysis | $ 550,000 | $ 125,000 | $ 250,000 | $ 125,000 | | | $ 20,000 | $ 20,000 | $ 10,000 | | |
| Owners Engineer (Pre-Construction) | $ 17,212,960 | | | $ 430,324 | $ 860,648 | $ 860,648 | $ 1,721,296 | $ 2,581,944 | $ 2,581,944 | $ 2,581,944 | $ 2,581,944 |
| Owner Engineer (Construction Phase) | $ 4,664,688 | | | | | | | | | | |
| Route Selection Services | $ 82,500 | $ 41,250 | $ 41,250 | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| Environmental Assessment | $ 1,896,614 | $ 142,246 | $ 142,246 | $ 189,661 | $ 189,661 | $ 208,628 | $ 208,628 | $ 208,628 | $ 189,661 | $ 208,628 | $ 189,661 |
| Stakeholder Outreach | $ 544,865 | $ 40,865 | $ 40,865 | $ 68,108 | $ 68,108 | $ 68,108 | $ 68,108 | $ 54,487 | $ 54,487 | $ 54,487 | $ 27,243 |
| Aboriginal Consultation | $ 98,420 | $ 9,842 | $ 12,303 | $ 12,303 | $ 12,303 | $ 12,303 | $ 12,303 | $ 9,842 | $ 9,842 | $ 4,921 | $ 2,461 |
| Aboriginal Consultation (Legal) | $ 250,000 | $ 50,000 | $ 50,000 | $ - | $ - | $ - | $ - | $ - | $ 100,000 | $ 50,000 | $ - |
| Non EA permitting | $ 468,724 | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ 117,181 | $ 117,181 |
| Construction Inspection/Management | $ 8,143,438 | | | | | | | | | | |
| Enviromental Inspection Contractor | $ 5,281,375 | | | | | | | | | | |
| Vegetation Management | $ 11,270,000 | | | | | | | | | | |
| Install & Maintain Man Camps | $ 9,933,732 | | | | | | | | | | |
| Spare Parts Facility | $ 1,000,000 | | | | | | | | | | |
| Capitalized Spare Parts | $ 1,876,372 | | | | | | | | | | |
| | | | | | | | | | | | |
| **Internal (MAT/RES)** | | | | | | | | | | | |
| Executive Management | $ 738,738 | $ 45,045 | $ 45,045 | $ 45,045 | $ 45,045 | $ 45,045 | $ 45,045 | $ 45,045 | $ 45,045 | $ 45,045 | $ 45,045 |
| Project Management | $ 8,869,661 | $ 326,726 | $ 331,094 | $ 335,462 | $ 352,934 | $ 357,302 | $ 357,302 | $ 407,971 | $ 424,570 | $ 435,926 | $ 467,376 |
| Engineering Management | $ 1,273,545 | $ 45,045 | $ 45,045 | $ 45,045 | $ 45,045 | $ 45,045 | $ 45,045 | $ 90,090 | $ 90,090 | $ 90,090 | $ 90,090 |
| Transmission/Planning | $ 245,700 | $ 81,900 | $ 81,900 | $ 81,900 | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| Expenses | $ 836,382 | $ 44,936 | $ 45,154 | $ 45,373 | $ 42,151 | $ 42,370 | $ 42,370 | $ 47,155 | $ 47,985 | $ 48,553 | $ 50,126 |
| | | | | | | | | | | | |
| **Material Procurement (included in construction contracts)** | | | | | | | | | | | |
| | | | | | | | | | | | |
| **Miscellaneous Costs** | | | | | | | | | | | |
| Legal Fees | $ 1,500,000 | $ 25,000 | $ 25,000 | $ 25,000 | $ 25,000 | $ 25,000 | $ 25,000 | $ 50,000 | $ 100,000 | $ 100,000 | $ 100,000 |
| Media Relations/Community | $ 1,000,000 | $ 50,000 | $ 50,000 | $ 50,000 | $ 50,000 | $ 50,000 | $ 50,000 | $ 50,000 | $ 50,000 | $ 50,000 | $ 50,000 |
| | | | | | | | | | | | |
| **ROW Costs** | | | | | | | | | | | |
| Right-of-Way Labor & Legal | $ 3,257,560 | $ 95,813 | $ 250,013 | $ 320,013 | $ 325,013 | $ 315,013 | $ 197,813 | $ 149,813 | $ 99,813 | $ 47,000 | $ 47,000 |
| ROW/Easements | $ 12,221,264 | $ 30,000 | $ 135,000 | $ 135,000 | $ 102,000 | $ 102,000 | $ 75,000 | $ 75,000 | $ 69,000 | $ - | $ - |
| First Nations | $ 800,000 | $ 46,000 | $ 175,000 | $ 175,000 | $ 95,000 | $ 95,000 | $ 86,000 | $ 86,000 | $ 6,000 | 6000 | 6000 |
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| | | | | | | | | | | | |
| SUBTOTAL PROJECT COSTS | | **$ 1,199,668** | **$ 1,719,915** | **$ 2,083,234** | **$ 2,212,908** | **$ 2,226,461** | **$ 2,953,909** | **$ 3,875,974** | **$ 3,878,436** | **$ 3,839,775** | **$ 3,774,127** |
| | | | | | | | | | | | |
| Contingency/Risk | $ - | | | | | | | | **$ -** | | |
| | | | | | | | | | | | |
| OVERALL PROJECT VALUE | $ 362,069,611 | | | | | | | | **$ 20,150,504** | | |
| | | | | | | | | | | | |
| **O&M Costs** | | | | | | | | | | | |

| **Item Description** | **Construction: LTC Review Period** | | **Construction: Delivery Phase** | | | | | | | | | | **Close out** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **2016** | | | | **2017** | | | | **2018** | | | | **2019** |
| | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 |
| **Major Contracts** | | | | | | | | | | | | | |
| Transmission Line Construction/Engineering/Management | | | | $ 4,467,551 | $ 4,467,551 | $ 4,467,551 | $ 17,870,205 | $ 17,870,205 | $ 17,870,205 | $ 4,467,551 | $ 4,467,551 | $ 2,233,776 | $ 2,233,776 |
| Transmission Line Materials/Equipment | | | | $ 10,424,286 | $ 10,424,286 | $ 10,424,286 | $ 41,697,145 | $ 41,697,145 | $ 41,697,145 | $ 10,424,286 | $ 10,424,286 | $ 10,424,286 | |
| Planning Studies & Cost Benefit Analysis | | | | | | | | | | | | | |
| Owners Engineer (Pre-Construction) | $ 860,648 | $ 860,648 | $ 860,648 | $ 430,324 | | | | | | | | | |
| Owner Engineer (Construction Phase) | | | | $ 466,469 | $ 699,703 | $ 699,703 | $ 699,703 | $ 699,703 | $ 699,703 | $ 233,234 | $ 233,234 | $ 116,617 | $ 116,617 |
| Route Selection Services | $ - | $ - | $ - | $ - | | | | | | | | | |
| Environmental Assessment | $ 18,966 | $ - | $ - | | | | | | | | | | |
| Stakeholder Outreach | $ - | $ - | $ - | | | | | | | | | | |
| Aboriginal Consultation | $ - | $ - | | | | | | | | | | | |
| Aboriginal Consultation (Legal) | $ - | $ - | $ - | | | | | | | | | | |
| Non EA permitting | $ 117,181 | $ 117,181 | $ - | $ - | | | | | | | | | |
| Construction Inspection/Management | | | | $ 452,413 | $ 452,413 | $ 452,413 | $ 1,809,653 | $ 1,809,653 | $ 1,809,653 | $ 452,413 | $ 452,413 | $ 452,413 | |
| Enviromental Inspection Contractor | | | | $ 293,410 | $ 293,410 | $ 293,410 | $ 1,173,639 | $ 1,173,639 | $ 1,173,639 | $ 293,410 | $ 293,410 | $ 293,410 | |
| Vegetation Management | | | | $ 3,381,000 | $ 3,381,000 | $ 2,254,000 | $ 1,690,500 | $ 563,500 | | | | | |
| Install & Maintain Man Camps | | | | $ 2,980,119 | $ 851,463 | $ 851,463 | $ 851,463 | $ 851,463 | $ 851,463 | $ 851,463 | $ 851,463 | $ 993,373.2 | |
| Spare Parts Facility | | | | | | | | | | | $ 775,000 | | |
| Capitalized Spare Parts | | | | | | | | | | | $ 1,876,372 | | |
| | | | | | | | | | | | | | |
| **Internal (MAT/RES)** | | | | | | | | | | | | | |
| Executive Management | $ 45,045 | $ 63,063 | $ 18,018 | $ 18,018 | $ 18,018 | $ 18,018 | $ 18,018 | $ 18,018 | $ 18,018 | $ 18,018 | $ 18,018 | $ 18,018 | $ - |
| Project Management | $ 489,216 | $ 543,379 | $ 414,960 | $ 414,960 | $ 414,960 | $ 414,960 | $ 414,960 | $ 393,120 | $ 393,120 | $ 393,120 | $ 327,600 | $ 262,080 | $ 196,560 |
| Engineering Management | $ 90,090 | $ 90,090 | $ 90,090 | $ 90,090 | $ 45,045 | $ 45,045 | $ 45,045 | $ 24,570 | $ 24,570 | $ 24,570 | $ 24,570 | $ 24,570 | $ 24,570 |
| Transmission/Planning | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| Expenses | $ 51,218 | $ 54,827 | $ 46,153 | $ 46,153 | $ 23,901 | $ 23,901 | $ 23,901 | $ 21,785 | $ 21,785 | $ 21,785 | $ 18,509 | $ 15,233 | $ 11,057 |
| | | | | | | | | | | | | | |
| **Material Procurement (included in construction contracts)** | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| **Miscellaneous Costs** | | | | | | | | | | | | | |
| Legal Fees | $ 100,000 | $ 100,000 | $ 200,000 | $ 175,000 | $ 150,000 | $ 125,000 | $ 25,000 | $ 25,000 | $ 25,000 | $ 25,000 | $ 25,000 | $ 25,000 | |
| Media Relations/Community | $ 50,000 | $ 50,000 | $ 50,000 | $ 50,000 | $ 50,000 | $ 50,000 | $ 50,000 | $ 50,000 | $ 25,000 | $ 25,000 | $ 25,000 | $ 25,000 | |
| | | | | | | | | | | | | | |
| **ROW Costs** | | | | | | | | | | | | | |
| Right-of-Way Labor & Legal | $ 47,000 | $ 107,000 | $ 371,862 | $ 884,398 | | | | | | | | | |
| ROW/Easements | $ - | $ - | $ 3,444,307 | $ 8,053,957 | | | | | | | | | |
| First Nations | $ 6,000 | $ 6,000 | $ 6,000 | $ 6,000 | | | | | | | | | |
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| | | | | | | | | | | | | | |
| SUBTOTAL PROJECT COSTS | **$ 1,875,364** | **$ 1,992,188** | **$ 5,502,039** | **$ 32,634,149** | **$ 21,271,750** | **$ 20,119,750** | **$ 66,369,232** | **$ 65,197,801** | **$ 64,609,301** | **$ 17,229,851** | **$ 19,812,426** | **$ 14,883,777** | **$ 2,582,579** |
| | | | | | | | | | | | | | |
| Contingency/Risk | | | | | | | | | | | | | **$ -** |
| | | | | | | | | | | | | | |
| OVERALL PROJECT VALUE | | | | | | | | | | | | | **$ 341,694,107** |
| | | | | | | | | | | | | | |
| **O&M Costs** | | | | | | | | | | | | | |

**Mid American Transmission/RES Canada**
**Ontario Energy Board**
**Cost Model Bid Proposal**
**20/12/2012**

| **Cost Model Type** | AVG |
|---|---|
| **230kV Single BASE H Frame** | D |

| **Item Description** | | **Development Phase** | | | | | | | | **Construction: LTC Review Period** | | | | **Construction: Delivery Phase** | | | | | | | | | | **Close out** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | **2013** | | **2014** | | | | **2015** | | | | **2016** | | | | **2017** | | | | **2018** | | | | **2019** |
| | | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 |
| **Major Contracts** | | | | | | | | | | | | | | | | | | | | | | | | |
| Transmission Line Construction/Engineering/Management | $ 79,542,928 | | | | | | | | | | | | | | $ 4,419,052 | $ 4,419,052 | $ 4,419,052 | $ 17,676,206 | $ 17,676,206 | $ 17,676,206 | $ 4,419,052 | $ 4,419,052 | $ 2,209,526 | $ 2,209,526 |
| Transmission Line Materials/Equipment | $ 185,600,165 | | | | | | | | | | | | | | $ 10,311,120 | $ 10,311,120 | $ 10,311,120 | $ 41,244,481 | $ 41,244,481 | $ 41,244,481 | $ 10,311,120 | $ 10,311,120 | $ 10,311,120 | |
| Planning Studies & Cost Benefit Analysis | $ 550,000 | $ 125,000 | $ 250,000 | $ 125,000 | | | $ 20,000 | $ 20,000 | $ 10,000 | | | | | | | | | | | | | | | |
| Owners Engineer (Pre-Construction) | $ 16,872,783 | | | $ 421,820 | $ 843,639 | $ 843,639 | $ 1,687,278 | $ 2,530,918 | $ 2,530,918 | $ 2,530,918 | $ 2,530,918 | $ 843,639 | $ 843,639 | $ 843,639 | $ 421,820 | | | | | | | | | |
| Owner Engineer (Construction Phase) | $ 4,572,500 | | | | | | | | | | | | | | $ 457,250 | $ 685,875 | $ 685,875 | $ 685,875 | $ 685,875 | $ 685,875 | $ 228,625 | $ 228,625 | $ 114,313 | $ 114,313 |
| Route Selection Services | $ 82,500 | $ 41,250 | $ 41,250 | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | | | | | | | | | |
| Environmental Assessment | $ 1,896,614 | $ 142,246 | $ 142,246 | $ 189,661 | $ 189,661 | $ 208,628 | $ 208,628 | $ 208,628 | $ 189,661 | $ 208,628 | $ 189,661 | $ 18,966 | $ - | $ - | | | | | | | | | | |
| Stakeholder Outreach | $ 544,865 | $ 40,865 | $ 40,865 | $ 68,108 | $ 68,108 | $ 68,108 | $ 68,108 | $ 54,487 | $ 54,487 | $ 54,487 | $ 27,243 | $ - | $ - | $ - | | | | | | | | | | |
| Aboriginal Consultation | $ 98,420 | $ 9,842 | $ 12,303 | $ 12,303 | $ 12,303 | $ 12,303 | $ 12,303 | $ 9,842 | $ 9,842 | $ 4,921 | $ 2,461 | $ - | $ - | | | | | | | | | | | |
| Aboriginal Consultation (Legal) | $ 250,000 | $ 50,000 | $ 50,000 | $ - | $ - | $ - | $ - | $ - | $ 100,000 | $ 50,000 | $ - | $ - | $ - | $ - | | | | | | | | | | |
| Non EA permitting | $ 468,724 | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ 117,181 | $ 117,181 | $ 117,181 | $ 117,181 | $ - | $ - | | | | | | | | | |
| Construction Inspection/Management | $ 7,982,500 | | | | | | | | | | | | | | $ 443,472 | $ 443,472 | $ 443,472 | $ 1,773,889 | $ 1,773,889 | $ 1,773,889 | $ 443,472 | $ 443,472 | $ 443,472 | |
| Enviromental Inspection Contractor | $ 5,177,000 | | | | | | | | | | | | | | $ 287,611 | $ 287,611 | $ 287,611 | $ 1,150,444 | $ 1,150,444 | $ 1,150,444 | $ 287,611 | $ 287,611 | $ 287,611 | |
| Vegetation Management | $ 11,047,273 | | | | | | | | | | | | | | $ 3,314,182 | $ 3,314,182 | $ 2,209,455 | $ 1,657,091 | $ 552,364 | | | | | |
| Install & Maintain Man Camps | $ 12,633,060 | | | | | | | | | | | | | | $ 3,789,918 | $ 1,082,834 | $ 1,082,834 | $ 1,082,834 | $ 1,082,834 | $ 1,082,834 | $ 1,082,834 | $ 1,082,834 | $ 1,263,306.0 | |
| Spare Parts Facility | $ 1,000,000 | | | | | | | | | | | | | | | | | | | | | $ 775,000 | | |
| Capitalized Spare Parts | $ 1,856,002 | | | | | | | | | | | | | | | | | | | | | $ 1,856,002 | | |
| | | | | | | | | | | | | | | | | | | | | | | | | |
| **Internal (MAT/RES)** | | | | | | | | | | | | | | | | | | | | | | | | |
| Executive Management | $ 738,738 | $ 45,045 | $ 45,045 | $ 45,045 | $ 45,045 | $ 45,045 | $ 45,045 | $ 45,045 | $ 45,045 | $ 45,045 | $ 45,045 | $ 45,045 | $ 63,063 | $ 18,018 | $ 18,018 | $ 18,018 | $ 18,018 | $ 18,018 | $ 18,018 | $ 18,018 | $ 18,018 | $ 18,018 | $ 18,018 | $ - |
| Project Management | $ 8,869,661 | $ 326,726 | $ 331,094 | $ 335,462 | $ 352,934 | $ 357,302 | $ 357,302 | $ 407,971 | $ 424,570 | $ 435,926 | $ 467,376 | $ 489,216 | $ 543,379 | $ 414,960 | $ 414,960 | $ 414,960 | $ 414,960 | $ 414,960 | $ 393,120 | $ 393,120 | $ 393,120 | $ 327,600 | $ 262,080 | $ 196,560 |
| Engineering Management | $ 1,273,545 | $ 45,045 | $ 45,045 | $ 45,045 | $ 45,045 | $ 45,045 | $ 45,045 | $ 90,090 | $ 90,090 | $ 90,090 | $ 90,090 | $ 90,090 | $ 90,090 | $ 90,090 | $ 90,090 | $ 45,045 | $ 45,045 | $ 45,045 | $ 24,570 | $ 24,570 | $ 24,570 | $ 24,570 | $ 24,570 | $ 24,570 |
| Transmission/Planning | $ 245,700 | $ 81,900 | $ 81,900 | $ 81,900 | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| Expenses | $ 836,382 | $ 44,936 | $ 45,154 | $ 45,373 | $ 42,151 | $ 42,370 | $ 42,370 | $ 47,155 | $ 47,985 | $ 48,553 | $ 50,126 | $ 51,218 | $ 54,827 | $ 46,153 | $ 46,153 | $ 23,901 | $ 23,901 | $ 23,901 | $ 21,785 | $ 21,785 | $ 21,785 | $ 18,509 | $ 15,233 | $ 11,057 |
| | | | | | | | | | | | | | | | | | | | | | | | | |
| **Material Procurement (included in construction contracts** | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | |
| **Miscellaneous Costs** | | | | | | | | | | | | | | | | | | | | | | | | |
| Legal Fees | $ 1,500,000 | $ 25,000 | $ 25,000 | $ 25,000 | $ 25,000 | $ 25,000 | $ 25,000 | $ 50,000 | $ 100,000 | $ 100,000 | $ 100,000 | $ 100,000 | $ 100,000 | $ 200,000 | $ 175,000 | $ 150,000 | $ 125,000 | $ 25,000 | $ 25,000 | $ 25,000 | $ 25,000 | $ 25,000 | $ 25,000 | |
| Media Relations/Community | $ 1,000,000 | $ 50,000 | $ 50,000 | $ 50,000 | $ 50,000 | $ 50,000 | $ 50,000 | $ 50,000 | $ 50,000 | $ 50,000 | $ 50,000 | $ 50,000 | $ 50,000 | $ 50,000 | $ 50,000 | $ 50,000 | $ 50,000 | $ 50,000 | $ 50,000 | $ 25,000 | $ 25,000 | $ 25,000 | $ 25,000 | |
| | | | | | | | | | | | | | | | | | | | | | | | | |
| **ROW Costs** | | | | | | | | | | | | | | | | | | | | | | | | |
| Right-of-Way Labor & Legal | $ 3,257,560 | $ 95,813 | $ 250,013 | $ 320,013 | $ 325,013 | $ 315,013 | $ 197,813 | $ 149,813 | $ 99,813 | $ 47,000 | $ 47,000 | $ 47,000 | $ 107,000 | $ 371,862 | $ 884,398 | | | | | | | | | |
| ROW/Easements | $ 12,221,264 | $ 30,000 | $ 135,000 | $ 135,000 | $ 102,000 | $ 102,000 | $ 75,000 | $ 75,000 | $ 69,000 | $ - | $ - | $ - | $ - | $ 3,444,307 | $ 8,053,957 | | | | | | | | | |
| First Nations | $ 800,000 | $ 46,000 | $ 175,000 | $ 175,000 | $ 95,000 | $ 95,000 | $ 86,000 | $ 86,000 | $ 6,000 | 6000 | 6000 | $ 6,000 | $ 6,000 | $ 6,000 | $ 6,000 | | | | | | | | | |
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| SUBTOTAL PROJECT COSTS | | **$ 1,199,668** | **$ 1,719,915** | **$ 2,074,729** | **$ 2,195,899** | **$ 2,209,452** | **$ 2,919,891** | **$ 3,824,948** | **$ 3,827,410** | **$ 3,788,748** | **$ 3,723,100** | **$ 1,858,355** | **$ 1,975,179** | **$ 5,485,030** | **$ 33,183,001** | **$ 21,246,070** | **$ 20,116,343** | **$ 65,847,744** | **$ 64,698,586** | **$ 64,121,223** | **$ 17,280,207** | **$ 19,842,413** | **$ 14,999,249** | **$ 2,556,025** |
| | | | | | | | | | | | | | | | | | | | | | | | | |
| Contingency/Risk | $ - | | | | | | | | **$ -** | | | | | | | | | | | | | | | **$ -** |
| | | | | | | | | | | | | | | | | | | | | | | | | |
| OVERALL PROJECT VALUE | $ 360,918,183 | | | | | | | | **$ 19,971,911** | | | | | | | | | | | | | | | **$ 340,721,273** |
| | | | | | | | | | | | | | | | | | | | | | | | | |
| **O&M Costs** | | | | | | | | | | | | | | | | | | | | | | | | |

**Mid American Transmission/RES Canada**
**Ontario Energy Board**
**Cost Model Bid Proposal**
**20/12/2012**

| **Cost Model Type** | AVG |
|---|---|
| **230kV Double ALT Lattice** | C |

| **Item Description** | | **Development Phase** | | | | | | | | **Construction: LTC Review Period** | | | | **Construction: Delivery Phase** | | | | | | | | | | **Close out** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | **2013** | | **2014** | | | | **2015** | | | | **2016** | | | | **2017** | | | | **2018** | | | | **2019** |
| | | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 |
| **Major Contracts** | | | | | | | | | | | | | | | | | | | | | | | | |
| Transmission Line Construction/Engineering/Management | $ 103,580,721 | | | | | | | | | | | | | | $ 5,754,485 | $ 5,754,485 | $ 5,754,485 | $ 23,017,938 | $ 23,017,938 | $ 23,017,938 | $ 5,754,485 | $ 5,754,485 | $ 2,877,242 | $ 2,877,242 |
| Transmission Line Materials/Equipment | $ 241,688,350 | | | | | | | | | | | | | | $ 13,427,131 | $ 13,427,131 | $ 13,427,131 | $ 53,708,522 | $ 53,708,522 | $ 53,708,522 | $ 13,427,131 | $ 13,427,131 | $ 13,427,131 | |
| Planning Studies & Cost Benefit Analysis | $ 550,000 | $ 125,000 | $ 250,000 | $ 125,000 | | | $ 20,000 | $ 20,000 | $ 10,000 | | | | | | | | | | | | | | | |
| Owners Engineer (Pre-Construction) | $ 17,212,960 | | | $ 430,324 | $ 860,648 | $ 860,648 | $ 1,721,296 | $ 2,581,944 | $ 2,581,944 | $ 2,581,944 | $ 2,581,944 | $ 860,648 | $ 860,648 | $ 860,648 | $ 430,324 | | | | | | | | | |
| Owner Engineer (Construction Phase) | $ 4,664,688 | | | | | | | | | | | | | | $ 466,469 | $ 699,703 | $ 699,703 | $ 699,703 | $ 699,703 | $ 699,703 | $ 233,234 | $ 233,234 | $ 116,617 | $ 116,617 |
| Route Selection Services | $ 82,500 | $ 41,250 | $ 41,250 | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | | | | | | | | | |
| Environmental Assessment | $ 1,896,614 | $ 142,246 | $ 142,246 | $ 189,661 | $ 189,661 | $ 208,628 | $ 208,628 | $ 208,628 | $ 189,661 | $ 208,628 | $ 189,661 | $ 18,966 | $ - | $ - | | | | | | | | | | |
| Stakeholder Outreach | $ 544,865 | $ 40,865 | $ 40,865 | $ 68,108 | $ 68,108 | $ 68,108 | $ 68,108 | $ 54,487 | $ 54,487 | $ 54,487 | $ 27,243 | $ - | $ - | $ - | | | | | | | | | | |
| Aboriginal Consultation | $ 98,420 | $ 9,842 | $ 12,303 | $ 12,303 | $ 12,303 | $ 12,303 | $ 12,303 | $ 9,842 | $ 9,842 | $ 4,921 | $ 2,461 | $ - | $ - | | | | | | | | | | | |
| Aboriginal Consultation (Legal) | $ 250,000 | $ 50,000 | $ 50,000 | $ - | $ - | $ - | $ - | $ - | $ 100,000 | $ 50,000 | $ - | $ - | $ - | $ - | | | | | | | | | | |
| Non EA permitting | $ 468,724 | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ 117,181 | $ 117,181 | $ 117,181 | $ 117,181 | $ - | $ - | | | | | | | | | |
| Construction Inspection/Management | $ 8,143,438 | | | | | | | | | | | | | | $ 452,413 | $ 452,413 | $ 452,413 | $ 1,809,653 | $ 1,809,653 | $ 1,809,653 | $ 452,413 | $ 452,413 | $ 452,413 | |
| Enviromental Inspection Contractor | $ 5,281,375 | | | | | | | | | | | | | | $ 293,410 | $ 293,410 | $ 293,410 | $ 1,173,639 | $ 1,173,639 | $ 1,173,639 | $ 293,410 | $ 293,410 | $ 293,410 | |
| Vegetation Management | $ 11,270,000 | | | | | | | | | | | | | | $ 3,381,000 | $ 3,381,000 | $ 2,254,000 | $ 1,690,500 | $ 563,500 | | | | | |
| Install & Maintain Man Camps | $ 12,795,266 | | | | | | | | | | | | | | $ 3,838,580 | $ 1,096,737 | $ 1,096,737 | $ 1,096,737 | $ 1,096,737 | $ 1,096,737 | $ 1,096,737 | $ 1,096,737 | $ 1,279,526.6 | |
| Spare Parts Facility | $ 1,000,000 | | | | | | | | | | | | | | | | | | | | | $ 775,000 | | |
| Capitalized Spare Parts | $ 2,416,883 | | | | | | | | | | | | | | | | | | | | | $ 2,416,883 | | |
| | | | | | | | | | | | | | | | | | | | | | | | | |
| **Internal (MAT/RES)** | | | | | | | | | | | | | | | | | | | | | | | | |
| Executive Management | $ 738,738 | $ 45,045 | $ 45,045 | $ 45,045 | $ 45,045 | $ 45,045 | $ 45,045 | $ 45,045 | $ 45,045 | $ 45,045 | $ 45,045 | $ 45,045 | $ 63,063 | $ 18,018 | $ 18,018 | $ 18,018 | $ 18,018 | $ 18,018 | $ 18,018 | $ 18,018 | $ 18,018 | $ 18,018 | $ 18,018 | $ - |
| Project Management | $ 8,869,661 | $ 326,726 | $ 331,094 | $ 335,462 | $ 352,934 | $ 357,302 | $ 357,302 | $ 407,971 | $ 424,570 | $ 435,926 | $ 467,376 | $ 489,216 | $ 543,379 | $ 414,960 | $ 414,960 | $ 414,960 | $ 414,960 | $ 414,960 | $ 393,120 | $ 393,120 | $ 393,120 | $ 327,600 | $ 262,080 | $ 196,560 |
| Engineering Management | $ 1,273,545 | $ 45,045 | $ 45,045 | $ 45,045 | $ 45,045 | $ 45,045 | $ 45,045 | $ 90,090 | $ 90,090 | $ 90,090 | $ 90,090 | $ 90,090 | $ 90,090 | $ 90,090 | $ 90,090 | $ 45,045 | $ 45,045 | $ 45,045 | $ 24,570 | $ 24,570 | $ 24,570 | $ 24,570 | $ 24,570 | $ 24,570 |
| Transmission/Planning | $ 245,700 | $ 81,900 | $ 81,900 | $ 81,900 | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| Expenses | $ 836,382 | $ 44,936 | $ 45,154 | $ 45,373 | $ 42,151 | $ 42,370 | $ 42,370 | $ 47,155 | $ 47,985 | $ 48,553 | $ 50,126 | $ 51,218 | $ 54,827 | $ 46,153 | $ 46,153 | $ 23,901 | $ 23,901 | $ 23,901 | $ 21,785 | $ 21,785 | $ 21,785 | $ 18,509 | $ 15,233 | $ 11,057 |
| | | | | | | | | | | | | | | | | | | | | | | | | |
| **Material Procurement (included in construction contracts** | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | |
| **Miscellaneous Costs** | | | | | | | | | | | | | | | | | | | | | | | | |
| Legal Fees | $ 1,500,000 | $ 25,000 | $ 25,000 | $ 25,000 | $ 25,000 | $ 25,000 | $ 25,000 | $ 50,000 | $ 100,000 | $ 100,000 | $ 100,000 | $ 100,000 | $ 100,000 | $ 200,000 | $ 175,000 | $ 150,000 | $ 125,000 | $ 25,000 | $ 25,000 | $ 25,000 | $ 25,000 | $ 25,000 | $ 25,000 | |
| Media Relations/Community | $ 1,000,000 | $ 50,000 | $ 50,000 | $ 50,000 | $ 50,000 | $ 50,000 | $ 50,000 | $ 50,000 | $ 50,000 | $ 50,000 | $ 50,000 | $ 50,000 | $ 50,000 | $ 50,000 | $ 50,000 | $ 50,000 | $ 50,000 | $ 50,000 | $ 50,000 | $ 25,000 | $ 25,000 | $ 25,000 | $ 25,000 | |
| | | | | | | | | | | | | | | | | | | | | | | | | |
| **ROW Costs** | | | | | | | | | | | | | | | | | | | | | | | | |
| Right-of-Way Labor & Legal | $ 3,257,560 | $ 95,813 | $ 250,013 | $ 320,013 | $ 325,013 | $ 315,013 | $ 197,813 | $ 149,813 | $ 99,813 | $ 47,000 | $ 47,000 | $ 47,000 | $ 107,000 | $ 371,862 | $ 884,398 | | | | | | | | | |
| ROW/Easements | $ 12,221,264 | $ 30,000 | $ 135,000 | $ 135,000 | $ 102,000 | $ 102,000 | $ 75,000 | $ 75,000 | $ 69,000 | $ - | $ - | $ - | $ - | $ 3,444,307 | $ 8,053,957 | | | | | | | | | |
| First Nations | $ 800,000 | $ 46,000 | $ 175,000 | $ 175,000 | $ 95,000 | $ 95,000 | $ 86,000 | $ 86,000 | $ 6,000 | 6000 | 6000 | $ 6,000 | $ 6,000 | $ 6,000 | $ 6,000 | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | |
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| AFUDC | | | | | | | | | | | | | | | | | | | | | | | | |
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| | | | | | | | | | | | | | | | | | | | | | | | | |
| SUBTOTAL PROJECT COSTS | | **$ 1,199,668** | **$ 1,719,915** | **$ 2,083,234** | **$ 2,212,908** | **$ 2,226,461** | **$ 2,953,909** | **$ 3,875,974** | **$ 3,878,436** | **$ 3,839,775** | **$ 3,774,127** | **$ 1,875,364** | **$ 1,992,188** | **$ 5,502,039** | **$ 37,782,386** | **$ 25,806,802** | **$ 24,654,802** | **$ 83,773,616** | **$ 82,602,186** | **$ 82,013,686** | **$ 21,764,903** | **$ 24,887,990** | **$ 18,816,241** | **$ 3,226,046** |
| | | | | | | | | | | | | | | | | | | | | | | | | |
| Contingency/Risk | $ - | | | | | | | | **$ -** | | | | | | | | | | | | | | | **$ -** |
| | | | | | | | | | | | | | | | | | | | | | | | | |
| OVERALL PROJECT VALUE | $ 442,687,654 | | | | | | | | **$ 20,150,504** | | | | | | | | | | | | | | | **$ 422,312,150** |
| | | | | | | | | | | | | | | | | | | | | | | | | |
| **O&M Costs** | | | | | | | | | | | | | | | | | | | | | | | | |

**Mid American Transmission/RES Canada**
**Ontario Energy Board**
**Cost Model Bid Proposal**
**20/12/2012**

| **Cost Model Type** | AVG |
|---|---|
| **230kV Double BASE Lattice** | B |

| **Item Description** | | **Development Phase** | | | | | | | | **Construction: LTC Review Period** | | | | **Construction: Delivery Phase** | | | | | | | | | | **Close out** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | **2013** | | **2014** | | | | **2015** | | | | **2016** | | | | **2017** | | | | **2018** | | | | **2019** |
| | | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 |
| **Major Contracts** | | | | | | | | | | | | | | | | | | | | | | | | |
| Transmission Line Construction/Engineering/Management | $ 102,267,627 | | | | | | | | | | | | | | $ 5,681,535 | $ 5,681,535 | $ 5,681,535 | $ 22,726,139 | $ 22,726,139 | $ 22,726,139 | $ 5,681,535 | $ 5,681,535 | $ 2,840,767 | $ 2,840,767 |
| Transmission Line Materials/Equipment | $ 238,624,464 | | | | | | | | | | | | | | $ 13,256,915 | $ 13,256,915 | $ 13,256,915 | $ 53,027,659 | $ 53,027,659 | $ 53,027,659 | $ 13,256,915 | $ 13,256,915 | $ 13,256,915 | |
| Planning Studies & Cost Benefit Analysis | $ 550,000 | $ 125,000 | $ 250,000 | $ 125,000 | | | $ 20,000 | $ 20,000 | $ 10,000 | | | | | | | | | | | | | | | |
| Owners Engineer (Pre-Construction) | $ 16,872,783 | | | $ 421,820 | $ 843,639 | $ 843,639 | $ 1,687,278 | $ 2,530,918 | $ 2,530,918 | $ 2,530,918 | $ 2,530,918 | $ 843,639 | $ 843,639 | $ 843,639 | $ 421,820 | | | | | | | | | |
| Owner Engineer (Construction Phase) | $ 4,572,500 | | | | | | | | | | | | | | $ 457,250 | $ 685,875 | $ 685,875 | $ 685,875 | $ 685,875 | $ 685,875 | $ 228,625 | $ 228,625 | $ 114,313 | $ 114,313 |
| Route Selection Services | $ 82,500 | $ 41,250 | $ 41,250 | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | | | | | | | | | |
| Environmental Assessment | $ 1,896,614 | $ 142,246 | $ 142,246 | $ 189,661 | $ 189,661 | $ 208,628 | $ 208,628 | $ 208,628 | $ 189,661 | $ 208,628 | $ 189,661 | $ 18,966 | $ - | $ - | | | | | | | | | | |
| Stakeholder Outreach | $ 544,865 | $ 40,865 | $ 40,865 | $ 68,108 | $ 68,108 | $ 68,108 | $ 68,108 | $ 54,487 | $ 54,487 | $ 54,487 | $ 27,243 | $ - | $ - | $ - | | | | | | | | | | |
| Aboriginal Consultation | $ 98,420 | $ 9,842 | $ 12,303 | $ 12,303 | $ 12,303 | $ 12,303 | $ 12,303 | $ 9,842 | $ 9,842 | $ 4,921 | $ 2,461 | $ - | $ - | | | | | | | | | | | |
| Aboriginal Consultation (Legal) | $ 250,000 | $ 50,000 | $ 50,000 | $ - | $ - | $ - | $ - | $ - | $ 100,000 | $ 50,000 | $ - | $ - | $ - | $ - | | | | | | | | | | |
| Non EA permitting | $ 468,724 | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ 117,181 | $ 117,181 | $ 117,181 | $ 117,181 | $ - | $ - | | | | | | | | | |
| Construction Inspection/Management | $ 7,982,500 | | | | | | | | | | | | | | $ 443,472 | $ 443,472 | $ 443,472 | $ 1,773,889 | $ 1,773,889 | $ 1,773,889 | $ 443,472 | $ 443,472 | $ 443,472 | |
| Enviromental Inspection Contractor | $ 5,177,000 | | | | | | | | | | | | | | $ 287,611 | $ 287,611 | $ 287,611 | $ 1,150,444 | $ 1,150,444 | $ 1,150,444 | $ 287,611 | $ 287,611 | $ 287,611 | |
| Vegetation Management | $ 11,047,273 | | | | | | | | | | | | | | $ 3,314,182 | $ 3,314,182 | $ 2,209,455 | $ 1,657,091 | $ 552,364 | | | | | |
| Install & Maintain Man Camps | $ 12,633,060 | | | | | | | | | | | | | | $ 3,789,918 | $ 1,082,834 | $ 1,082,834 | $ 1,082,834 | $ 1,082,834 | $ 1,082,834 | $ 1,082,834 | $ 1,082,834 | $ 1,263,306.0 | |
| Spare Parts Facility | $ 1,000,000 | | | | | | | | | | | | | | | | | | | | | $ 775,000 | | |
| Capitalized Spare Parts | $ 2,386,245 | | | | | | | | | | | | | | | | | | | | | $ 2,386,245 | | |
| | | | | | | | | | | | | | | | | | | | | | | | | |
| **Internal (MAT/RES)** | | | | | | | | | | | | | | | | | | | | | | | | |
| Executive Management | $ 738,738 | $ 45,045 | $ 45,045 | $ 45,045 | $ 45,045 | $ 45,045 | $ 45,045 | $ 45,045 | $ 45,045 | $ 45,045 | $ 45,045 | $ 45,045 | $ 63,063 | $ 18,018 | $ 18,018 | $ 18,018 | $ 18,018 | $ 18,018 | $ 18,018 | $ 18,018 | $ 18,018 | $ 18,018 | $ 18,018 | $ - |
| Project Management | $ 8,869,661 | $ 326,726 | $ 331,094 | $ 335,462 | $ 352,934 | $ 357,302 | $ 357,302 | $ 407,971 | $ 424,570 | $ 435,926 | $ 467,376 | $ 489,216 | $ 543,379 | $ 414,960 | $ 414,960 | $ 414,960 | $ 414,960 | $ 414,960 | $ 393,120 | $ 393,120 | $ 393,120 | $ 327,600 | $ 262,080 | $ 196,560 |
| Engineering Management | $ 1,273,545 | $ 45,045 | $ 45,045 | $ 45,045 | $ 45,045 | $ 45,045 | $ 45,045 | $ 90,090 | $ 90,090 | $ 90,090 | $ 90,090 | $ 90,090 | $ 90,090 | $ 90,090 | $ 90,090 | $ 45,045 | $ 45,045 | $ 45,045 | $ 24,570 | $ 24,570 | $ 24,570 | $ 24,570 | $ 24,570 | $ 24,570 |
| Transmission/Planning | $ 245,700 | $ 81,900 | $ 81,900 | $ 81,900 | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| Expenses | $ 836,382 | $ 44,936 | $ 45,154 | $ 45,373 | $ 42,151 | $ 42,370 | $ 42,370 | $ 47,155 | $ 47,985 | $ 48,553 | $ 50,126 | $ 51,218 | $ 54,827 | $ 46,153 | $ 46,153 | $ 23,901 | $ 23,901 | $ 23,901 | $ 21,785 | $ 21,785 | $ 21,785 | $ 18,509 | $ 15,233 | $ 11,057 |
| | | | | | | | | | | | | | | | | | | | | | | | | |
| **Material Procurement (included in construction contracts** | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | |
| **Miscellaneous Costs** | | | | | | | | | | | | | | | | | | | | | | | | |
| Legal Fees | $ 1,500,000 | $ 25,000 | $ 25,000 | $ 25,000 | $ 25,000 | $ 25,000 | $ 25,000 | $ 50,000 | $ 100,000 | $ 100,000 | $ 100,000 | $ 100,000 | $ 100,000 | $ 200,000 | $ 175,000 | $ 150,000 | $ 125,000 | $ 25,000 | $ 25,000 | $ 25,000 | $ 25,000 | $ 25,000 | $ 25,000 | |
| Media Relations/Community | $ 1,000,000 | $ 50,000 | $ 50,000 | $ 50,000 | $ 50,000 | $ 50,000 | $ 50,000 | $ 50,000 | $ 50,000 | $ 50,000 | $ 50,000 | $ 50,000 | $ 50,000 | $ 50,000 | $ 50,000 | $ 50,000 | $ 50,000 | $ 50,000 | $ 50,000 | $ 25,000 | $ 25,000 | $ 25,000 | $ 25,000 | |
| | | | | | | | | | | | | | | | | | | | | | | | | |
| **ROW Costs** | | | | | | | | | | | | | | | | | | | | | | | | |
| Right-of-Way Labor & Legal | $ 3,257,560 | $ 95,813 | $ 250,013 | $ 320,013 | $ 325,013 | $ 315,013 | $ 197,813 | $ 149,813 | $ 99,813 | $ 47,000 | $ 47,000 | $ 47,000 | $ 107,000 | $ 371,862 | $ 884,398 | | | | | | | | | |
| ROW/Easements | $ 12,221,264 | $ 30,000 | $ 135,000 | $ 135,000 | $ 102,000 | $ 102,000 | $ 75,000 | $ 75,000 | $ 69,000 | $ - | $ - | $ - | $ - | $ 3,444,307 | $ 8,053,957 | | | | | | | | | |
| First Nations | $ 800,000 | $ 46,000 | $ 175,000 | $ 175,000 | $ 95,000 | $ 95,000 | $ 86,000 | $ 86,000 | $ 6,000 | 6000 | 6000 | $ 6,000 | $ 6,000 | $ 6,000 | $ 6,000 | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | |
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| | | | | | | | | | | | | | | | | | | | | | | | | |
| SUBTOTAL PROJECT COSTS | | **$ 1,199,668** | **$ 1,719,915** | **$ 2,074,729** | **$ 2,195,899** | **$ 2,209,452** | **$ 2,919,891** | **$ 3,824,948** | **$ 3,827,410** | **$ 3,788,748** | **$ 3,723,100** | **$ 1,858,355** | **$ 1,975,179** | **$ 5,485,030** | **$ 37,391,278** | **$ 25,454,347** | **$ 24,324,620** | **$ 82,680,855** | **$ 81,531,697** | **$ 80,954,333** | **$ 21,488,485** | **$ 24,580,934** | **$ 18,576,285** | **$ 3,187,266** |
| | | | | | | | | | | | | | | | | | | | | | | | | |
| Contingency/Risk | $ - | | | | | | | | **$ -** | | | | | | | | | | | | | | | **$ -** |
| | | | | | | | | | | | | | | | | | | | | | | | | |
| OVERALL PROJECT VALUE | $ 437,197,424 | | | | | | | | **$ 19,971,911** | | | | | | | | | | | | | | | **$ 417,000,514** |
| | | | | | | | | | | | | | | | | | | | | | | | | |
| **O&M Costs** | | | | | | | | | | | | | | | | | | | | | | | | |

# Appendix 4

ieso
Power to Ontario.

**Independent Electricity System Operator**
Station A, Box 4474
Toronto, Ontario M5W 4E5
t 905 855 6100
www.ieso.ca

March 25, 2013

Mr. Cory Blair
RES Canada Transmission LP
1040 S. Service Rd. East
Unit 200, Suite 22
Oakville, L6J 2X7

Dear Mr. Blair:

Re: OEB Procedure Order No. 6, March 04, 2013

The above OEB Procedure Order directs one interrogatory at RES that depends upon IESO input for a detailed response. In particular, RES interrogatory No 8 states:

*8. The IESO in its Feasibility Study IESO_REP_0748 compares the relative merits of a new high-capacity single-circuit line versus a new double-circuit line with respect to a one-plus-one contingency. The Study describes control actions (e.g. generation dispatch, load rejection, increased transfers) , which would be necessary in the event of a second single-element contingency after experiencing an initial single-element contingency or outage if the new line is a single circuit line.*

- *a) Can RES provide any evidence that the IESO, the OPA or RES determined the availability of the control actions noted in IESO_REP_0748?*
- *b) Can RES provide any evidence that the IESO, the OPA or RES determined the annual cost of the control actions noted in IESO_REP_0748 (up to 300 MW additional generation or import, or some lesser amount of generation/import for armed load rejection up to 150 MW)? If yes, and assuming that the economic analysis is conducted over a 50 year period, what is the total cost?*

For the single-circuit option, the IESO has evaluated increasing generation, increasing imports, and managing load in the North West in the event of a second single-element contingency after experiencing an initial single-element contingency. The IESO is confident enough control actions are available to satisfy the load security criteria found in §7.1 of its Ontario Resource and Transmission Assessment Criteria even without firm long-term arrangements with neighbouring jurisdictions.

The IESO has not assessed annual costs associated with these control actions.

Yours truly,

Stephen Burns

Stephen Burns P. Eng
Sr. Engineer, Planning and Assessments, IESO

# Appendix 5

**Table P-14**

($, in millions CAD)

| | | Case 2 (Higher total spend, lower actual exceptions) | | | |
|---|---|---|---|---|---|
| | | Project bid | Total actual spent | Traditional rate making | Proposed rate making |
| **Total project cost** | (a) | 413.4 | 428.4 | 428.4 | 428.4 |
| Adjust for | | | | | |
| **Exceptions embedded in cost above** | | | | | |
| Land acquisition costs | | 15.5 | 9.5 | 9.5 | 15.5 |
| Environmental and permitting costs | | 2.5 | 2.5 | 2.5 | 2.5 |
| Aboriginal participation costs | | 1.0 | 1.0 | 1.0 | 1.0 |
| Line distance greater than 410 km (Actual 411 km) | | - | 1.0 | 1.0 | 1.0 |
| Total exceptions | (b) | 19.0 | 14.0 | 14.0 | 20.0 |
| Cost excluding exceptions | (c)=(a)-(b) | 394.4 | 414.4 | 414.4 | 408.4 |
| Allowed cost based on bid | (d) | | | 414.4 | 394.4 |
| Allowed exceptions | (e) | | | 14.0 | 20.0 |
| Cost overages on bid amount | (f)=(c)-(d) | | | | 14.0 |
| Cost savings from bid amount | (g) | | | | 0.0 |
| Traditional rate making rate base | (h)=(a)-(f)-(g) | | | 428.4 | 413.4 |
| Equity (40%) | (i)=(h)*0.4 | | | 171.4 | 165.4 |
| Debt (60%) | (j)=(h)*0.6 | | | 257.0 | 248.0 |
| Penalty return rate base | (f) | | | | 15.0 |
| Equity (40%) | (k)=(f)*0.4 | | | | 6.0 |
| Debt (60%) | (l)=(f)*0.6 | | | | 9.0 |
| Allowed equity return | (p) | | | 8.93% | 8.93% |
| Allowed debt return | (q) | | | 4.03% | 4.03% |
| Penalty equity return | (q) | | | | 4.03% |
| Incentive equity rate | (r) | | | | 11.93% |
| Revenue under traditional rate making ($) [1] | (i)*(p)+(j)*(q) | | | 25.7 | 24.8 |
| Revenue under penalty rate ($) [1] | (k)*(q)+(l)*(q) | | | - | 0.6 |
| Incentive equity return on savings ($) [1] | (n)*(r)+(o)*(q) | | | | - |
| Total | | | | 25.7 | 25.4 |
| Annual savings to customers | | | | | 0.3 |

[1] Assumes a period of no cash tax payment and hence no gross-up.

**Table P-15**

($, in millions CAD)

| | | Case 3 (Lower total spend, higher actual exceptions) | | | |
|---|---|---|---|---|---|
| | | Project bid | Total actual spent | Rate making based on bid | Proposed rate making |
| **Total project cost** | (a) | 413.4 | 398.4 | 413.4 | 398.4 |
| Adjust for | | | | | |
| **Exceptions embedded in cost above** | | | | | |
| Land acquisition costs | | 15.5 | 19.5 | 19.5 | 19.5 |
| Environmental and permitting costs | | 2.5 | 2.5 | 2.5 | 2.5 |
| Aboriginal participation costs | | 1.0 | 1.0 | 1.0 | 1.0 |
| Line distance greater than 410 km (Actual 411 km) | | - | 1.0 | 1.0 | 1.0 |
| Total exceptions | (b) | 19.0 | 24.0 | 24.0 | 24.0 |
| | | | | | |
| Cost excluding exceptions | (c)=(a)-(b) | 394.4 | 374.4 | 389.4 | 374.4 |
| Allowed cost based on bid | (d) | | | 389.4 | 394.4 |
| Allowed exceptions | (e) | | | 24.0 | 24.0 |
| Cost overages on bid amount | (f) | | | | 0.0 |
| Cost savings from bid amount | (c) | | | | 20.0 |
| | | | | | |
| Traditional rate making rate base | (d)=(a)-(c | | | 398.4 | 378.4 |
| Equity (40%) | (e)=(d)*0.4 | | | 159.4 | 151.4 |
| Debt (60%) | (f)=(d)*0.6 | | | 139.9 | 227.0 |
| | | | | | |
| Incentive return rate base | (g) | | | | 20.0 |
| Equity (40%) | (h)=(g)*0.4 | | | | 8.0 |
| Debt (60%) | (i)=(g)*0.6 | | | | 12.0 |
| | | | | | |
| Allowed equity return | (j) | | | 8.93% | 8.93% |
| Allowed debt return | (k) | | | 4.03% | 4.03% |
| | | | | | |
| Penalty equity return | (l) | | | | 4.03% |
| Incentive equity rate | (m) | | | | 11.93% |
| | | | | | |
| Revenue under traditional rate making ($) [1] | (e)*(j)+(f)*(k) | | | 23.9 | 22.7 |
| Revenue under penalty rate ($) [1] | | | | - | - |
| Incentive equity return on savings ($) [1] | (m)*(j)+(i)*(k) | | | | 1.4 |
| Total | | | | 23.9 | 24.1 |
| | | | | | |
| Annual savings to customers | | | | | (0.2) |

[1] Assumes a period of no cash tax payment and hence no gross-up.