UNDERTAKING

Undertaking

TO PROVIDE WORK PLAN SUPPORTING THE $5 MILLION EXPENDITURE

Response

The Distribution System Innovation component of the Smart Grid capital program shown in the interrogatory at Exhibit H, Tab 9, Schedule 13 consists of 7 specific areas of work, for which additional detail is provided below:

Sub Program Name	Work Description	2010 ($M)	2011 ($M)
A. Distribution Monitoring - Pilot	Our rural Dx system is not currently monitored except at metering points. With DGs additional monitoring will be required.	0.9	0.8
B. DVAR Feasibility for Dx Transient Stability/Control	The ability to maximize DGs depends on dynamic VAR management. Capacitor and reactor banks are static devices.	1.0	1.0
C. Dx Automation Pilot	Sectionalize a feeder fault quickly and restoring the rest improves reliability. Doing this requires intelligence and automation.	0.6	0.4
D. Intelligent Feeder Protections	For DG maximization and load-generation mix variation, protections need to be adaptive and change their settings appropriately.	0.9	0.9
E. Other/Misc - Technical Studies and Pilots	Other smaller pilots include: short circuit control, energy storage, battery charging, solar PV as VAR control, inverter harmonics.	0.9	0.9
F. Smart Automation - Feeder + Area Control	With increased DG penetration (intermittency) will come balancing with additional supply at the Dx level. This will be for an area.	0.4	0.4
G. Smart Load Control – Demand Response (DR), CDM	In the ultimate DER (distributed energy resource) environment, the load-generation balance will also require demand side actions such as DR and CDM.	0.4	0.4
Total Distribution System Innovation Program		**5.1**	**4.8**