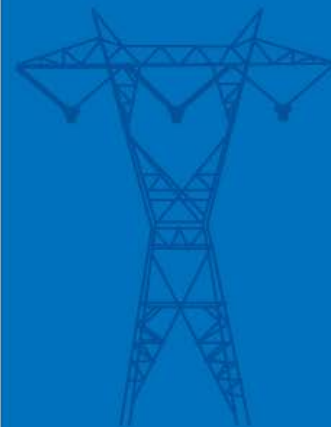


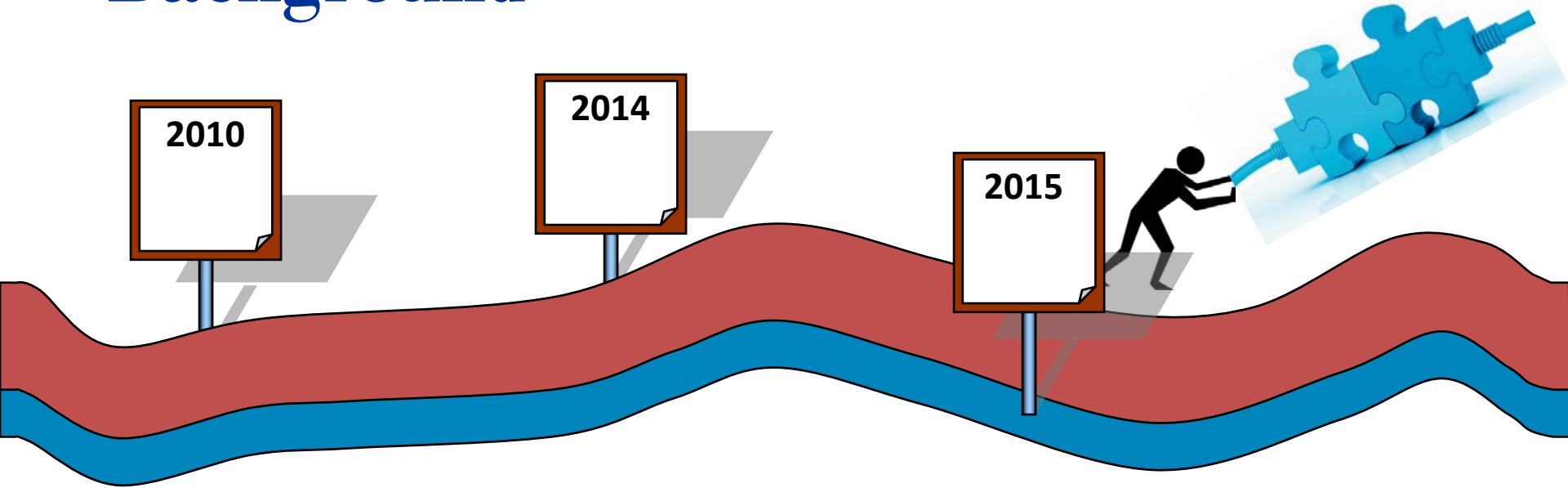
DSM *and the* IRP

An Energy Efficiency Modeling Discussion

Rina Harris



Background



1. Vectren Electric EE Approved

- Energy Efficiency programs began.

2. C/I Customers opt-out

- 2014 Senate Enrolled Act 340

3. EE Planning linked to IRP

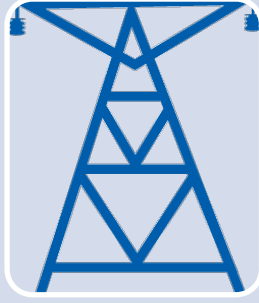
- 2015 Senate Enrolled Act 412

Major Energy Efficiency Modeling Assumptions

- Vectren's IRP process will inform the level of Energy Efficiency (EE) to achieve in future program plans



EE blocks include both residential and C/I savings



The model may select up to 2% of eligible sales annually. Aligns with technical potential in MPS.



8 EE blocks are available at 0.25% of eligible sales



No minimum level of EE has been embedded into our sales and demand forecast.



80% net to gross ratio, which is consistent with our most recent evaluation



For optimization runs, EE block selection must continue throughout study period

DSM Blocks – Base Case

DSM Resource Options Net of Free Riders										
Year	Eligible GWh Conservation Savings	Percent of Eligible Sales Potential	MWh Block 1	MWh Block 2	MWh Block 3	MWh Block 4	MWh Block 5	MWh Block 6	MWh Block 7	MWh Block 8
2016										
2017	3,493									
2018	3,525	2.00%	6,986	6,986	6,986	6,986	6,986	6,986	6,986	6,986
2019	3,545	2.00%	7,050	7,050	7,050	7,050	7,050	7,050	7,050	7,050
2020	3,571	2.00%	7,089	7,089	7,089	7,089	7,089	7,089	7,089	7,089
2021	3,577	2.00%	7,141	7,141	7,141	7,141	7,141	7,141	7,141	7,141
2022	3,594	2.00%	7,154	7,154	7,154	7,154	7,154	7,154	7,154	7,154
2023	3,613	2.00%	7,188	7,188	7,188	7,188	7,188	7,188	7,188	7,188
2024	3,640	2.00%	7,227	7,227	7,227	7,227	7,227	7,227	7,227	7,227
2025	3,654	2.00%	7,281	7,281	7,281	7,281	7,281	7,281	7,281	7,281
2026	3,672	2.00%	7,309	7,309	7,309	7,309	7,309	7,309	7,309	7,309
2027	3,692	2.00%	7,344	7,344	7,344	7,344	7,344	7,344	7,344	7,344
2028	3,721	2.00%	7,384	7,384	7,384	7,384	7,384	7,384	7,384	7,384
2029	3,739	2.00%	7,442	7,442	7,442	7,442	7,442	7,442	7,442	7,442
2030	3,755	2.00%	7,477	7,477	7,477	7,477	7,477	7,477	7,477	7,477
2031	3,772	2.00%	7,511	7,511	7,511	7,511	7,511	7,511	7,511	7,511
2032	3,796	2.00%	7,543	7,543	7,543	7,543	7,543	7,543	7,543	7,543
2033	3,810	2.00%	7,592	7,592	7,592	7,592	7,592	7,592	7,592	7,592
2034	3,831	2.00%	7,620	7,620	7,620	7,620	7,620	7,620	7,620	7,620
2035	3,850	2.00%	7,663	7,663	7,663	7,663	7,663	7,663	7,663	7,663
2036	3,876	2.00%	7,701	7,701	7,701	7,701	7,701	7,701	7,701	7,701

*EE savings amount for 2016-2017 will be based upon existing Commission approved EE plan

DSM Resource Cost

- Vectren's current 2016 operating plan used as a starting point for block pricing
 - Escalated levelized cost in real dollars based on penetration model. The prices increase from block 1 up to block 8 and increases over time
- EIA data was used to determine the relationship between the cost to implement EE programs and market penetration
- Developed sensitives with high and low cost projections

Modeling Results



DSM was not selected in Base Case

Alternative views were considered with higher and lower cost projections

Preferred Plan selected DSM at a level of 1% sales

Filed EE Plans are guided by Preferred Portfolio of the IRP

Challenges/Lesson's Learned

Challenges:

- DSM cost projection over planning horizon
 - EIA data - issues with data credibility
- Modeling constraints
 - Large number of resources require multiple modeling iterations – year by year for DSM selection is challenging

Lesson's Learned:

- MPS to serve a larger role
- Sensitives are important
- Be innovative

Questions?

