Testing the Impact of Pace

Conservation Resources Advisory Committee
March 24, 2017

Northwest Power and Conservation Council

SEVENTH NORTHWEST POWER PLAN

Acquisition Rate Sensitivity Testing

- Problem: EE acquisition rates uncertain
- Purpose:
  - What is the value of going faster or slower?
  - What is impact on EE avoided cost?
  - What are the resource consequences?
  - What are the revenue requirements?
- Tool: Regional Portfolio Model
  - Test slow & fast achievable penetration
- CRAC Issue: What ranges to test?

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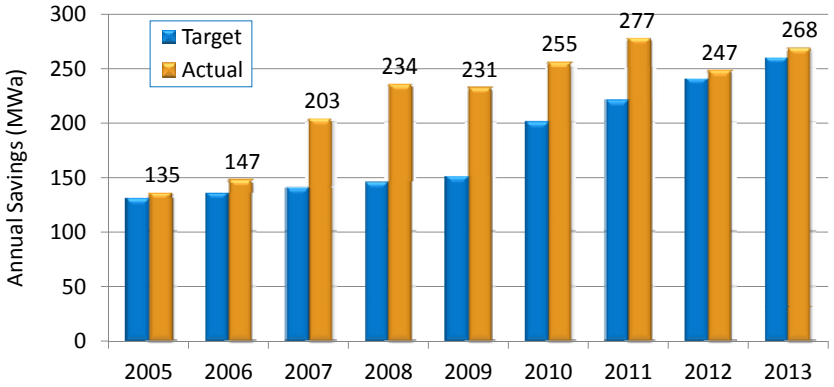
Accomplishments Compared to Targets Since 2005



Five years where achievements exceeded targets by over 40%

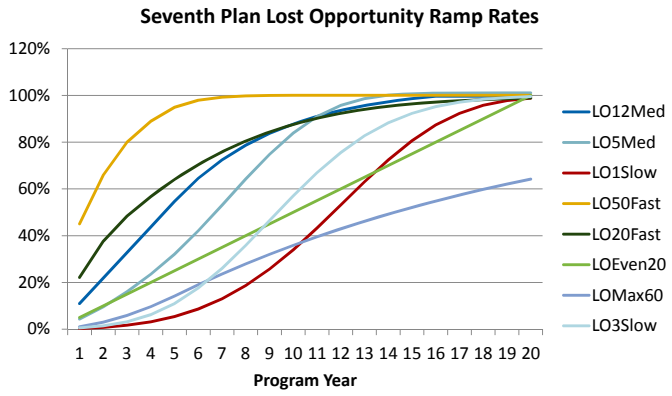
Ramp Rate Sensitivity Testing

Staff Analysis: Two Methods Considered

1. Swap Ramp Rate Curves
   - *SLOW:* Shift Down One
   - *FAST:* Shift Up One
2. Shift Ramp Rates
   - *SLOW:* Proportional Shift Later in Time
   - *FAST:* Proportional Shift Earlier in Time

- Both applied to all measures & all cost bins
- Both have affect of moving forward/backward in time

Family of Ramp Rate Curves



Separate Ramp Rates for each Measure

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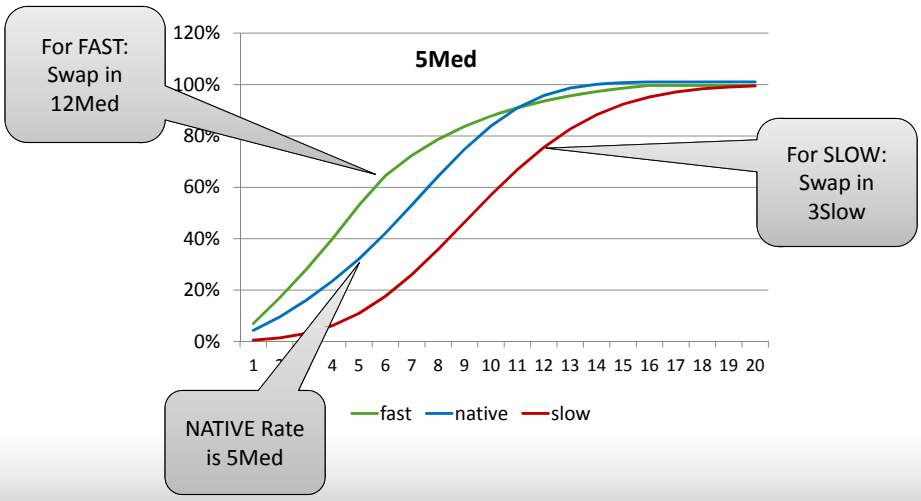
Swap Example



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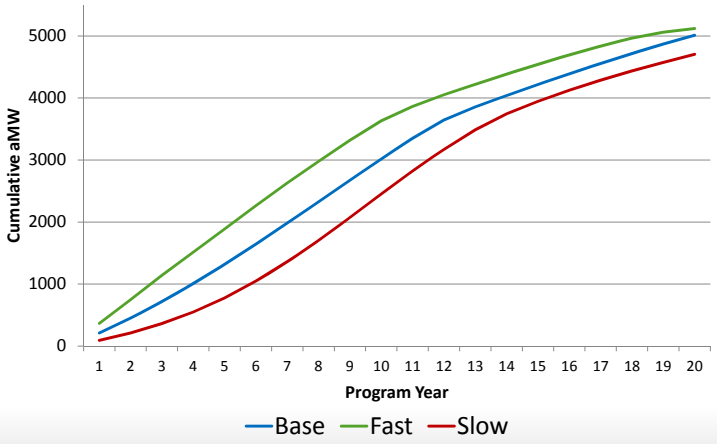
Impact of Swaps: Cumulative

All Measures All Cost Bins



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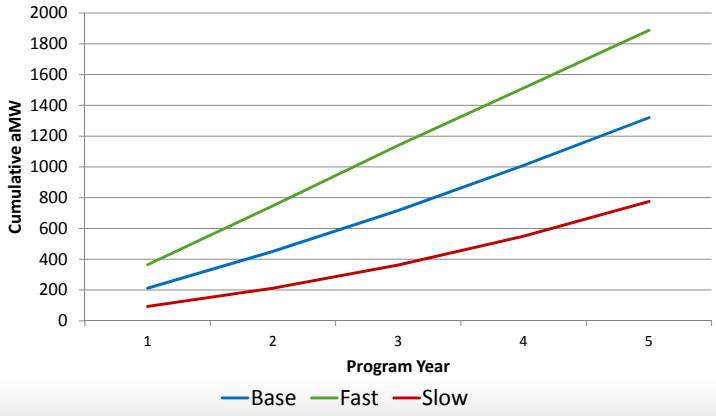
Impact of Swaps: Cumulative

First Five Years, All Measures All Cost Bins



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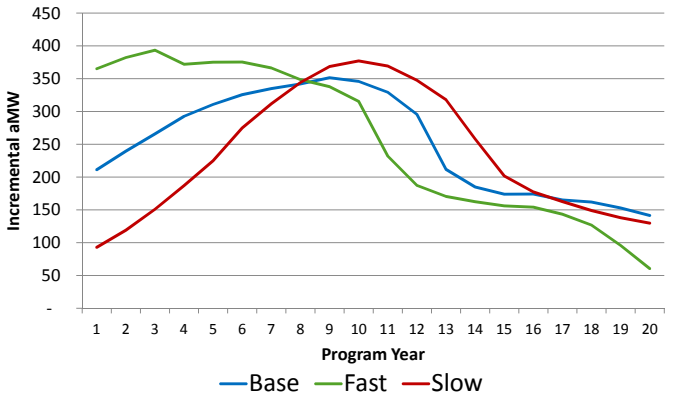
Impact of Swaps: Incremental

All Measures All Cost Bins



Plus/Minus 100 aMW per year in early years

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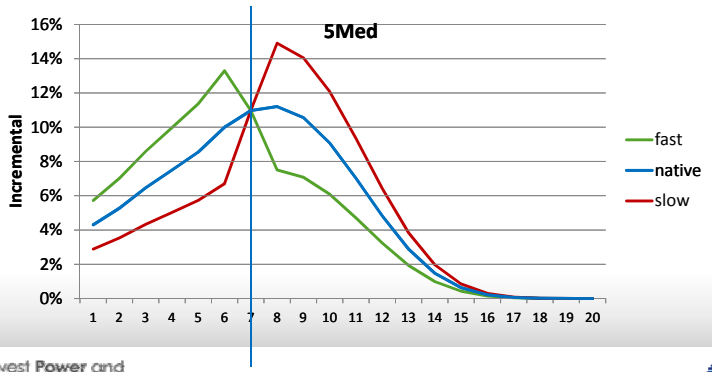
Shift Method

- Find mid point of each curve
- Proportional & symmetric shift each side of mid point
- Scalable
- *FAST:* Shift up if left of mid-point,
- *SLOW*: Shift down if left of mid-point



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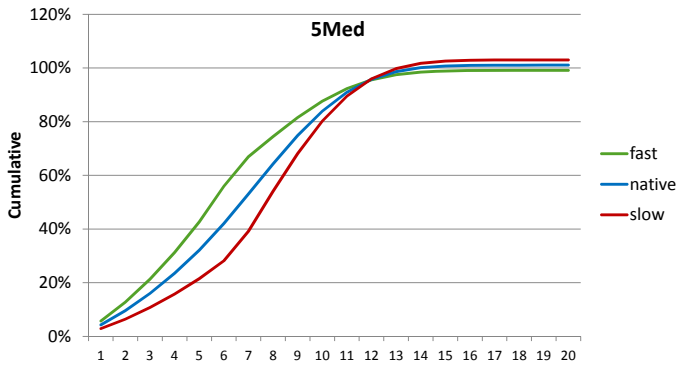
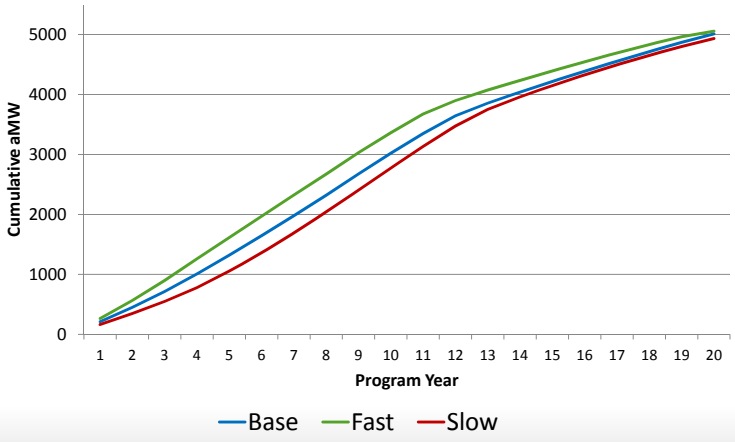
Shift Example Cumulative



Shifts are smoother curves, less dramatic near-term

Impact of Shifts: Cumulative

20 Years, All Measures All Cost Bins (33% Shift)



Impact of Swaps: Cumulative

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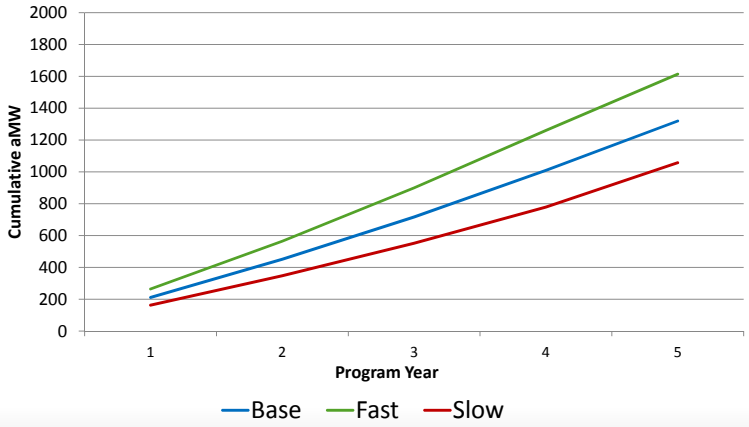

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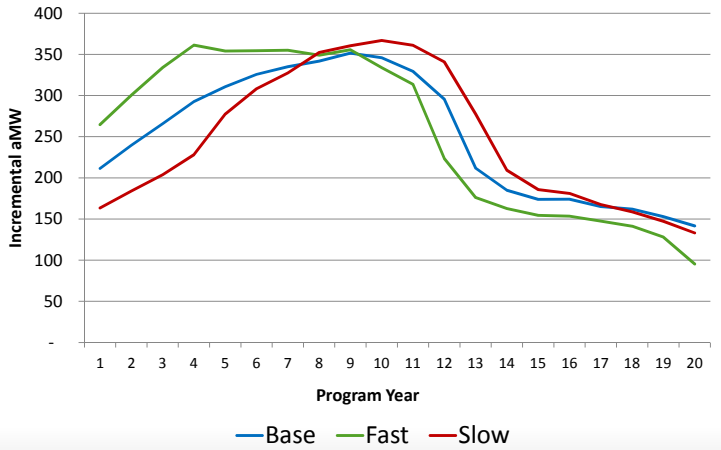
Impact of Swaps Incremental



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Discussion

- Swaps move acquisitions 3-4 years
  - Big jumps in faster ramps
- Shifts move acquisitions 1-4 years (depend on shift %)
  - Proportional shifts faster & slower ramps

Fast/Slow Results

- RPM analysis expected in May

End

Ramp Rate Swap Mapping

Ramp Rate - Base	Fast	Slow
1Slow	3Slow	1Slow
3Slow	5Med	1Slow
5Med	Custom	3Slow
Even20	12Med	3Slow
12Med	Custom	5Med
20Fast	50Fast	12Med
50Fast	50Fast	20Fast
DEI	1Slow	5Med
Max60	Max60	Max60