New Transmission Products Can Benefit Wind: Conditional Firm and Redispatch

Presenters:

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Who We Are

Renewable Northwest Project

- Renewable energy companies and environmental and consumer groups actively promoting policies that support renewable energy development

PPM Energy

- Develops and operates wind and thermal energy facilities, markets electricity and natural gas, and engages in natural gas storage

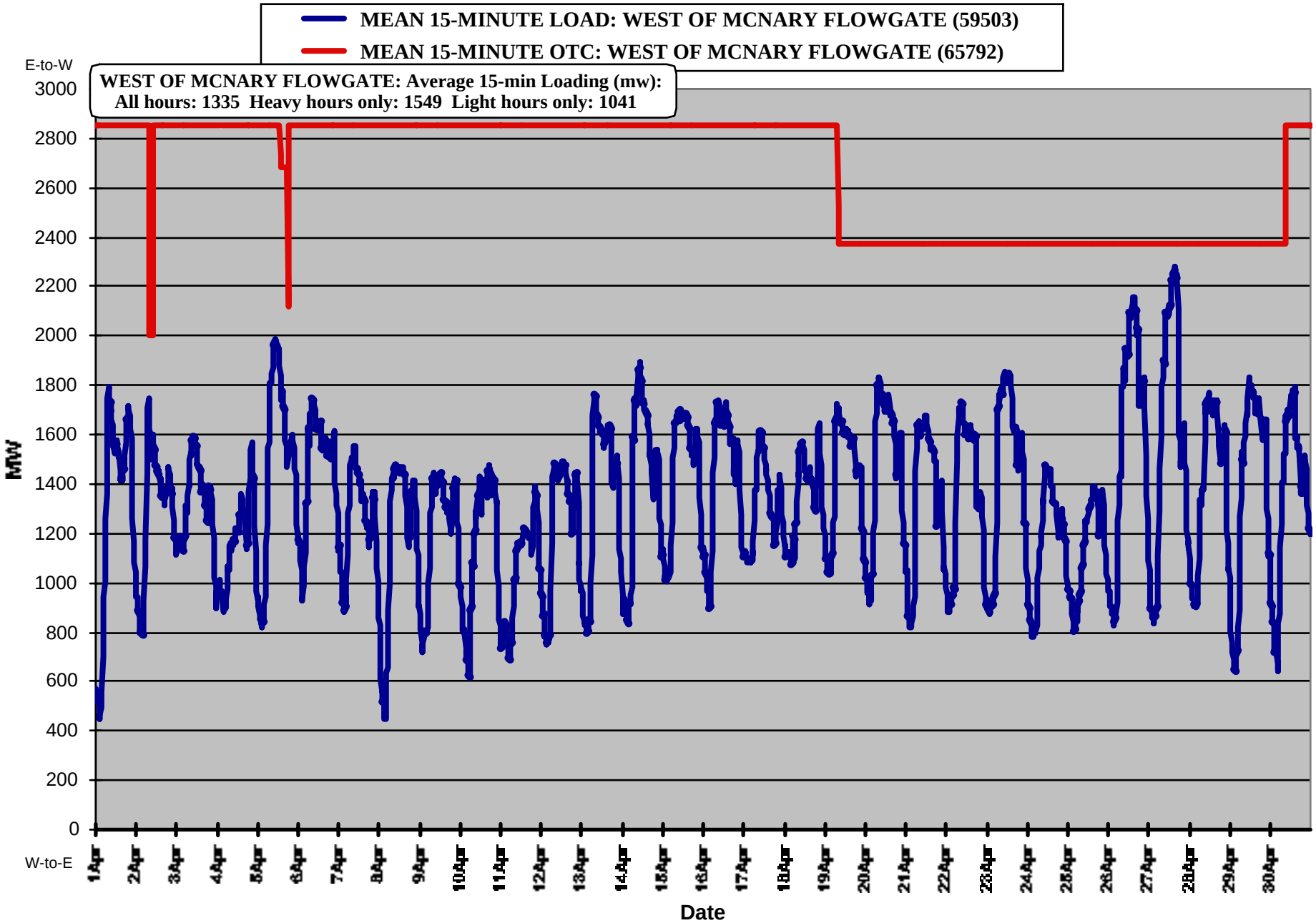
Growing Demand for Renewable Energy

- WGA CDEAC Proposal
- Utilities subject to state RPS requirements
- Clean air and climate change
- Diversity of generation resources
- Hedge against fuel-price volatility
- Increased utility acquisition and consumer demand for renewables

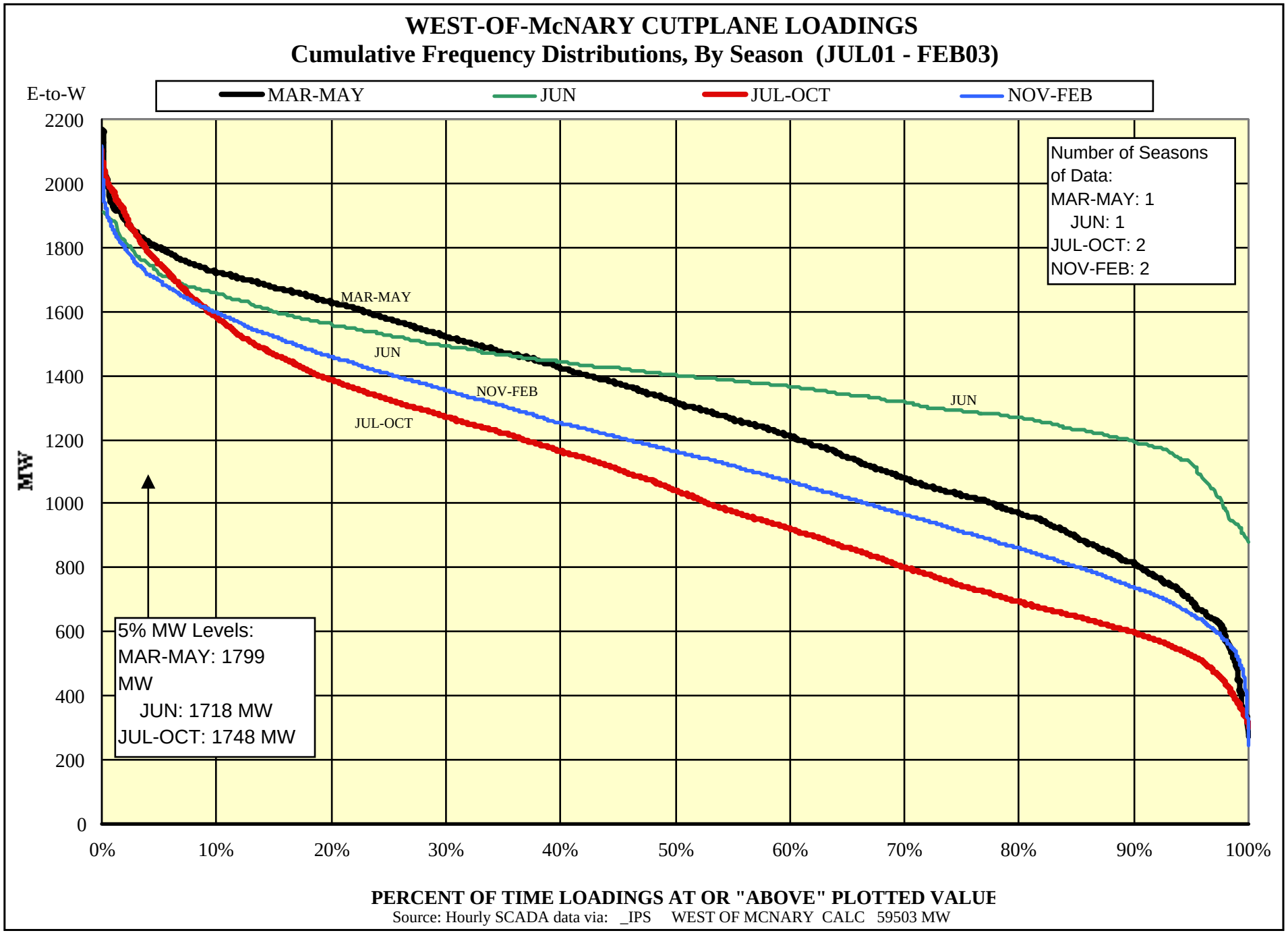
The Problem: The Need for Transmission Availability

- Little transmission construction in the last 10-15 years
- Few long-term transmission contracts offered due to lack of “firm” capacity
- OATT firm and non-firm does not allow utilities to offer unused capacity on a long-term basis
- Near-term solutions required to deploy wind sooner
- SSG-WI and RMAT’s studies show there is significant unused capacity on many transmission paths

WEST OF MCNARY FLOWGATE
Actual Loadings and OTCs: 01APR04 - 30APR04



Source: 15-minute average of 5-minute instantaneous readings via SCADA


WEST-OF-McNARY CUTPLANE LOADINGS
Cumulative Frequency Distributions, By Season (JUL01 - FEB03)
E-to-W
MAR-MAY
JUN
JUL-OCT
NOV-FEB
MW
2200
2000
1800
1600
1400
1200
1000
800
600
400
200
0
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%
Number of Seasons of Data:
MAR-MAY: 1
JUN: 1
JUL-OCT: 2
NOV-FEB: 2
MAR-MAY
JUN
NOV-FEB
JUL-OCT
JUN
5% MW Levels:
MAR-MAY: 1799 MW
JUN: 1718 MW
JUL-OCT: 1748 MW
PERCENT OF TIME LOADINGS AT OR "ABOVE" PLOTTED VALUE
Source: Hourly SCADA data via: _IPS WEST OF MCNARY CALC 59503 MW

New Products: An Opportunity

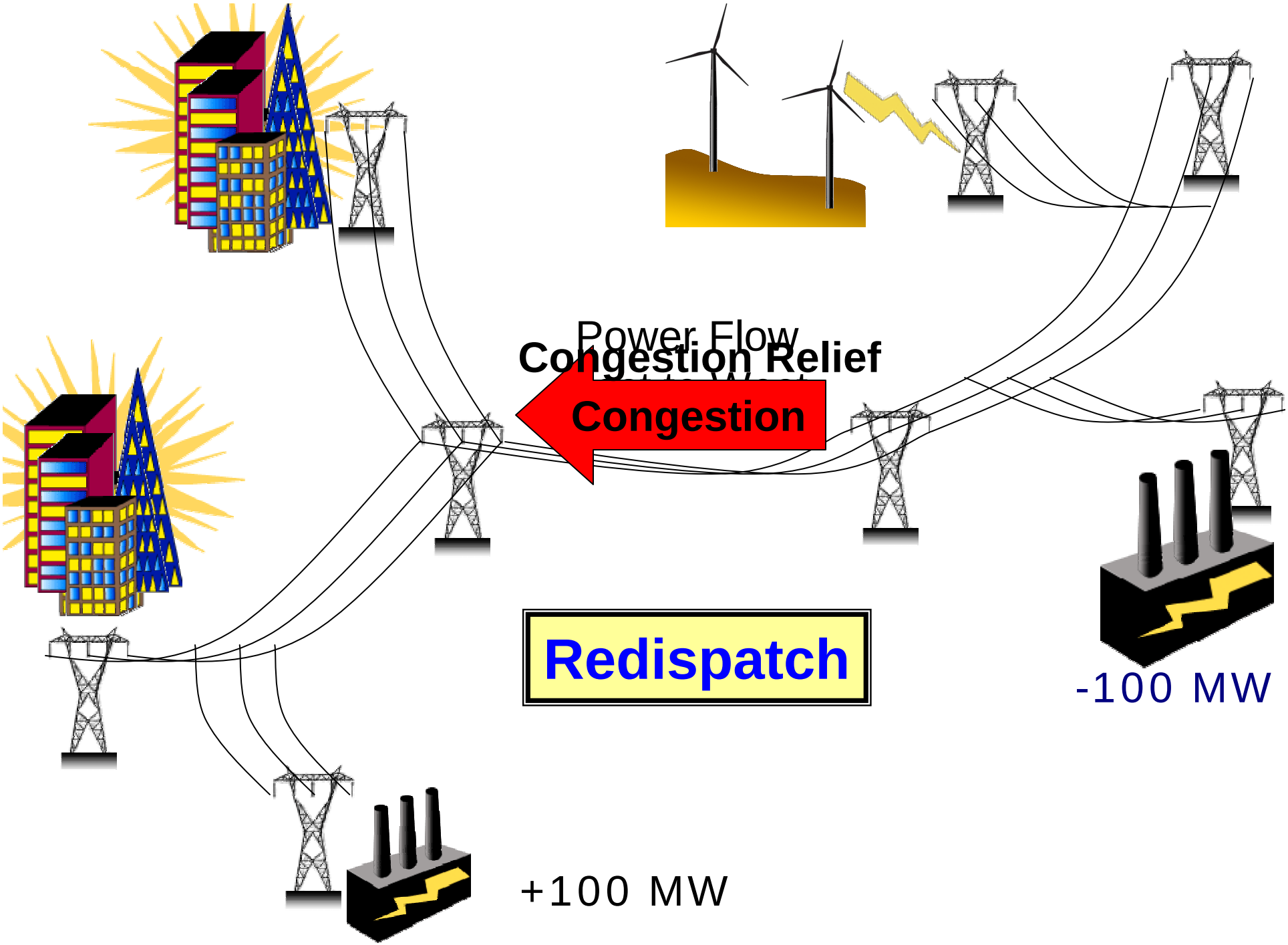
- New products can enable incremental amounts of new long-term service
- Cost of dealing with congestion is often much less than the cost of transmission upgrades
- Regulators expect grid efficiency before paying for expansion
- Brings more revenue to utilities and their ratepayers

Conditional-Firm Details

- Offered when long-term point-to-point requests can not be filled
- “Firm” for as much of the year as possible
- Clearly defined times/hours of the year, or contingency, during which this service can be curtailed prior to firm
- Can be a bridge until new transmission is constructed, but not necessary
- Customers need certainty of costs and risks up front

Redispatch

- Transmission customer pays other generators to ramp up and/or down facilities to relieve transmission congestion
- Utilities use redispatch all the time for their own systems
- More firm transmission capacity without potential interruptions associated with conditional-firm
- Redispatched generators are fully compensated


Power Flow
Congestion Relief
Congestion
Redispatch
-100 MW
+100 MW

New Product Benefits

- More access to the current transmission system
- Short lead times, unlike transmission line construction
- More efficient use of current system
- More revenue for transmission owners with cost savings to end use customers

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