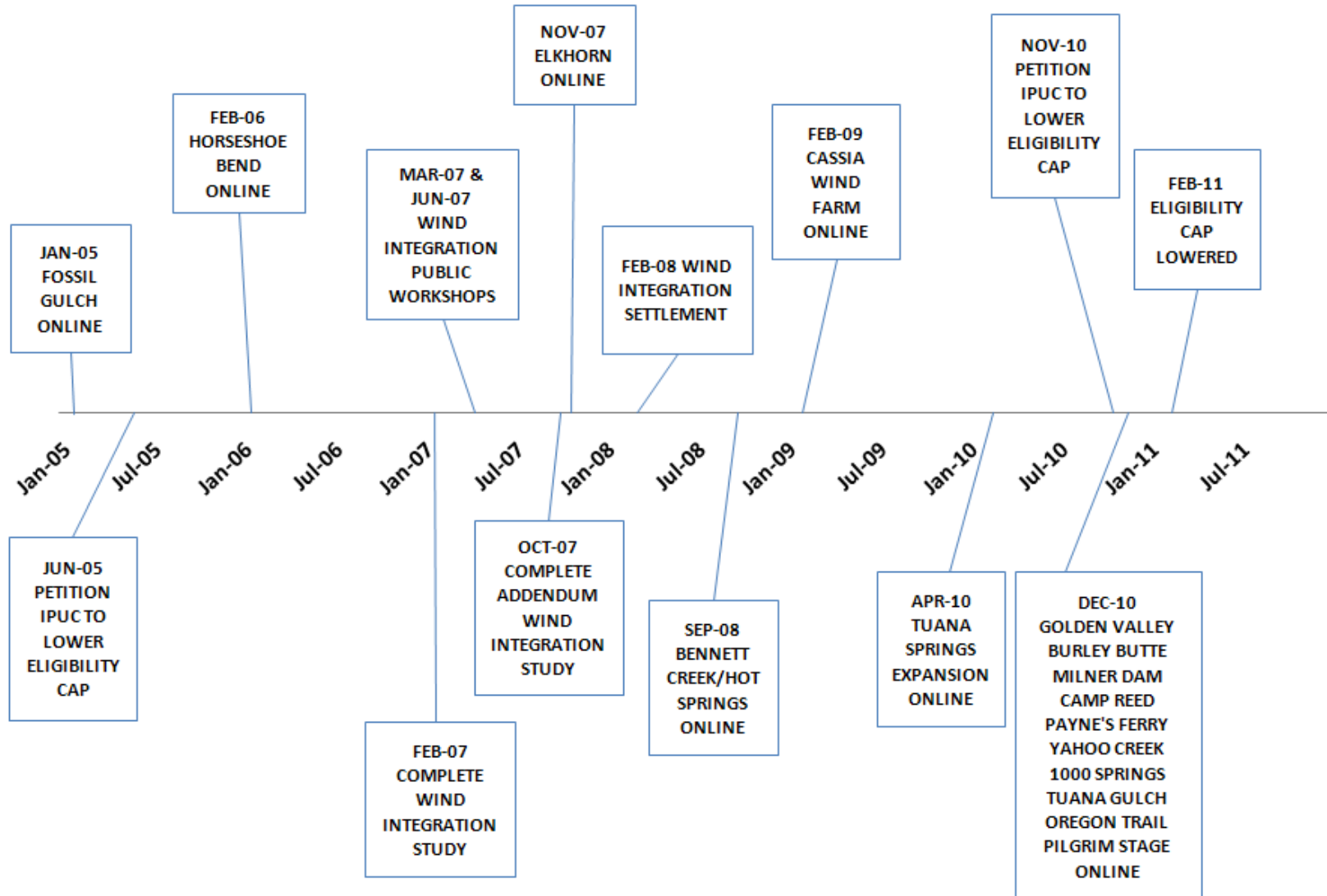


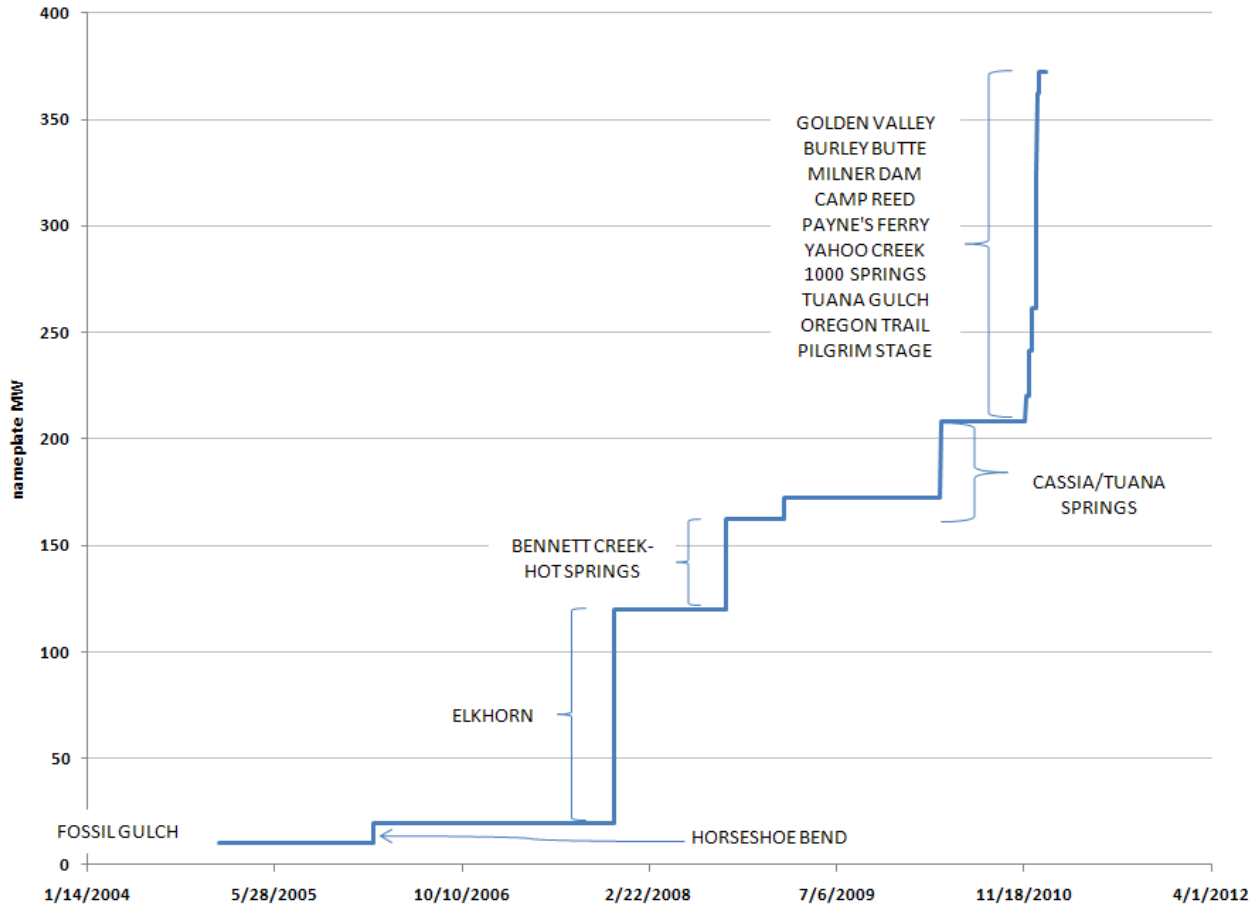
Wind Integration Public Workshop – March 16, 2011

- Agenda
 - Introduction/meeting overview
 - Historical background
 - Idaho Power system overview
 - Study methodology
 - Wind build-outs for study
 - Q & A

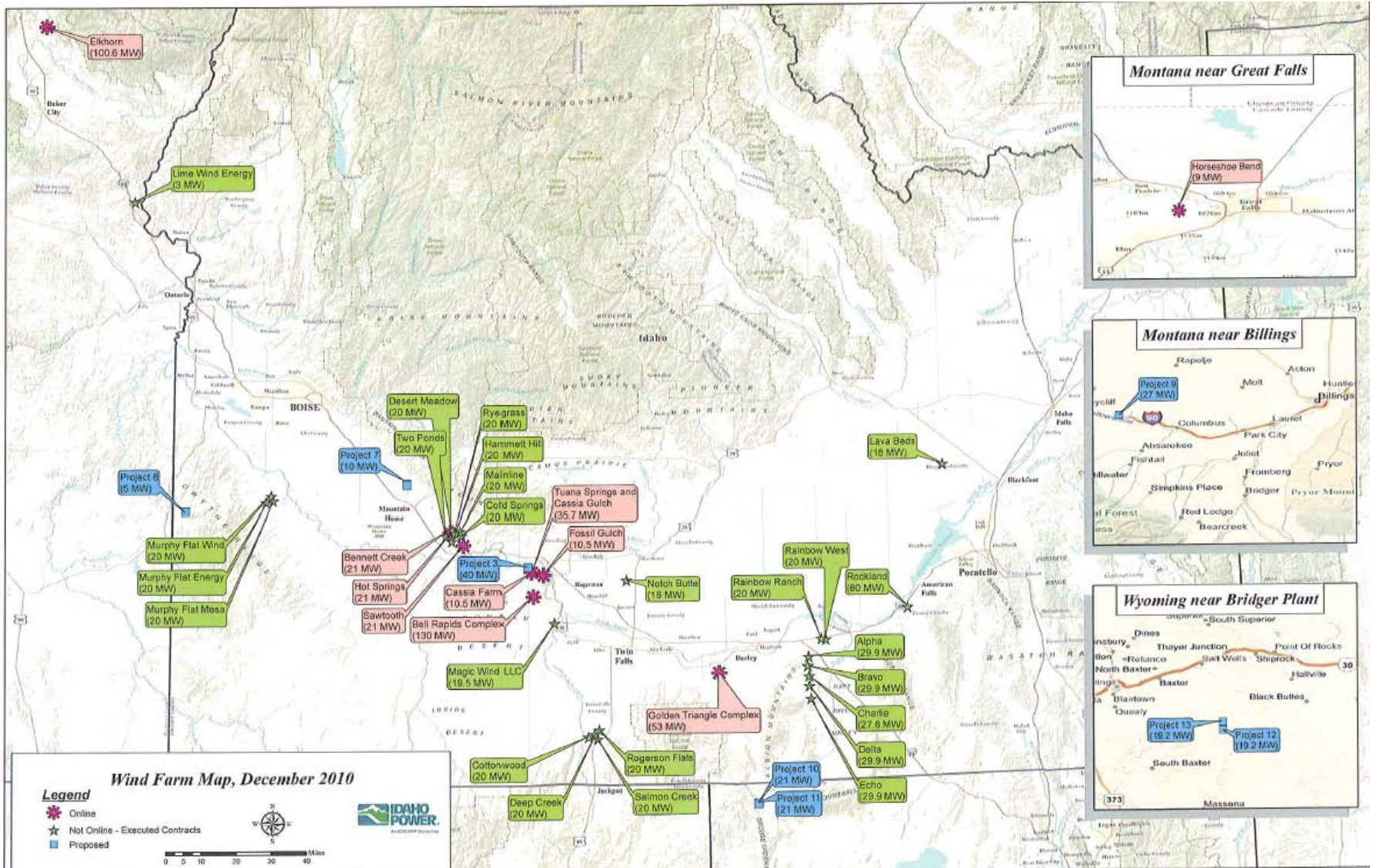
Timeline – Wind & Idaho Power



Wind Nameplate by Online Date



Idaho Power & Wind Generation



Service Area and Resources

Hydroelectric Facilities and Nameplate Capacities

1	Hells Canyon	391,500 kW
2	Oxbow	190,000 kW
3	Brownlee	585,400 kW
4	Cascade	12,420 kW
5	Swan Falls	27,170 kW
6	C. J. Strike	82,800 kW
7	Bliss	75,000 kW
8	Lower Malad	13,500 kW
9	Upper Malad	8,270 kW
10	Lower Salmon	60,000 kW
11	Upper Salmon	34,500 kW
12	Thousand Springs	8,800 kW
13	Clear Lake	2,500 kW
14	Shoshone Falls	12,500 kW
15	Twin Falls	52,897 kW
16	Milner	59,448 kW
17	American Falls	92,340 kW
Total		1,709,045 kW

Thermal Facilities And Capacities

Coal

▲ Jim Bridger	770,501 kW
▲ North Valmy	283,500 kW
▲ Boardman	64,200 kW*

Natural Gas

▲ Bennett Mountain	172,800 kW
▲ Evander Andrews	270,900 kW**

Diesel

▲ Salmon Diesel	5,000 kW
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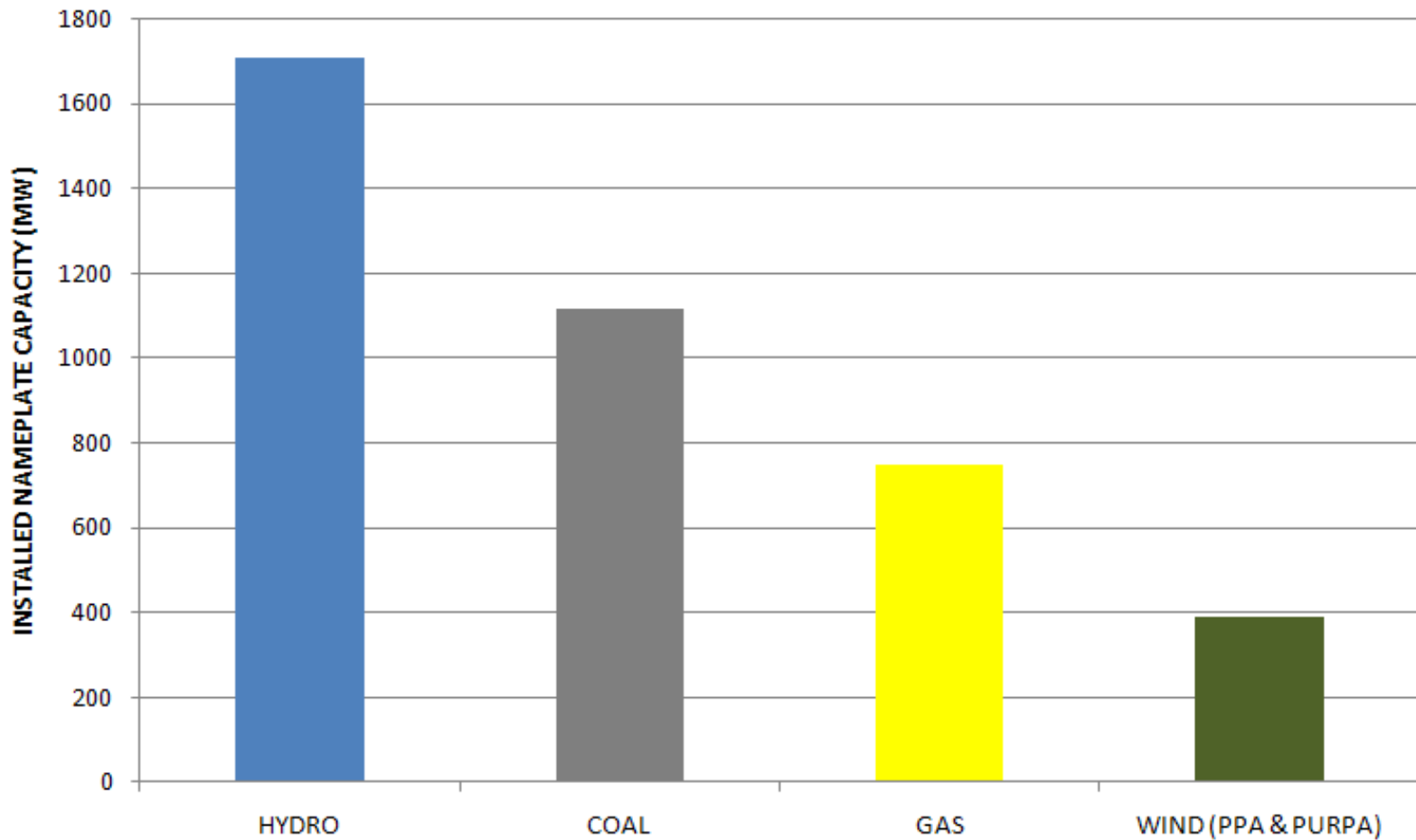
Total 1,566,901 kW

■ Future Langley Gulch Power Plant

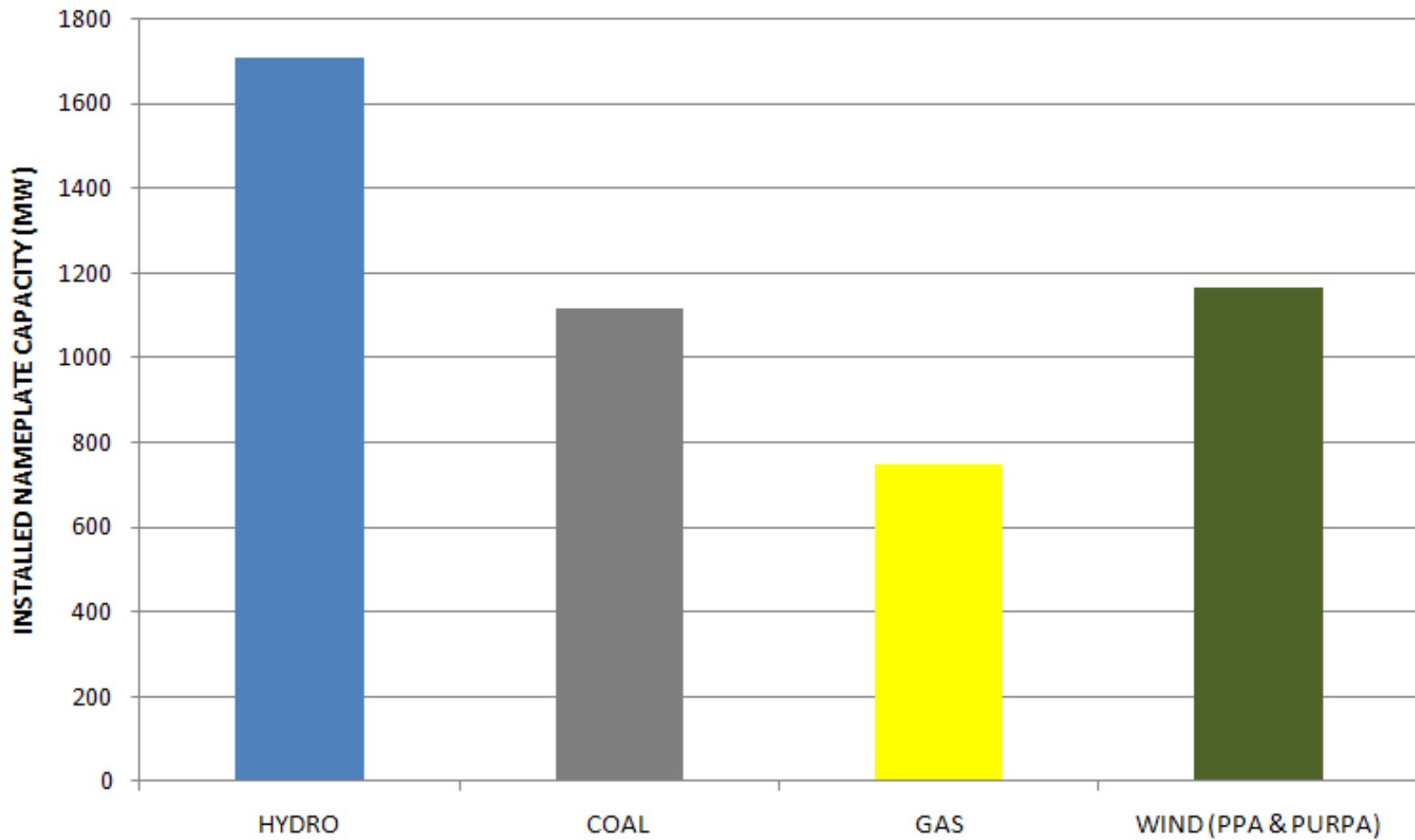


* Idaho Power Co. Share ** Danskin

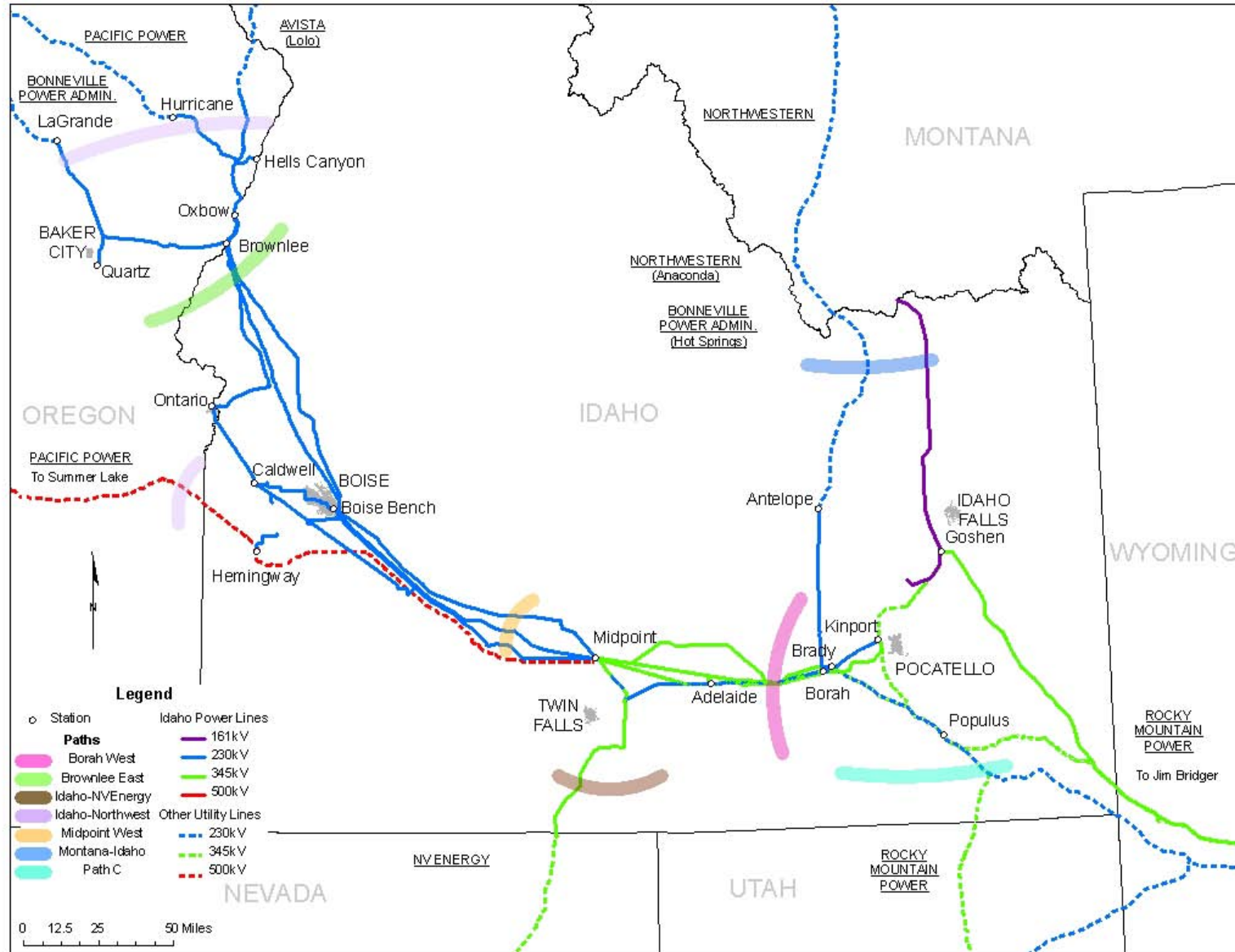
Nameplate Generation



Nameplate Generation of the Future



Transmission System Map



Balance Load & Resources

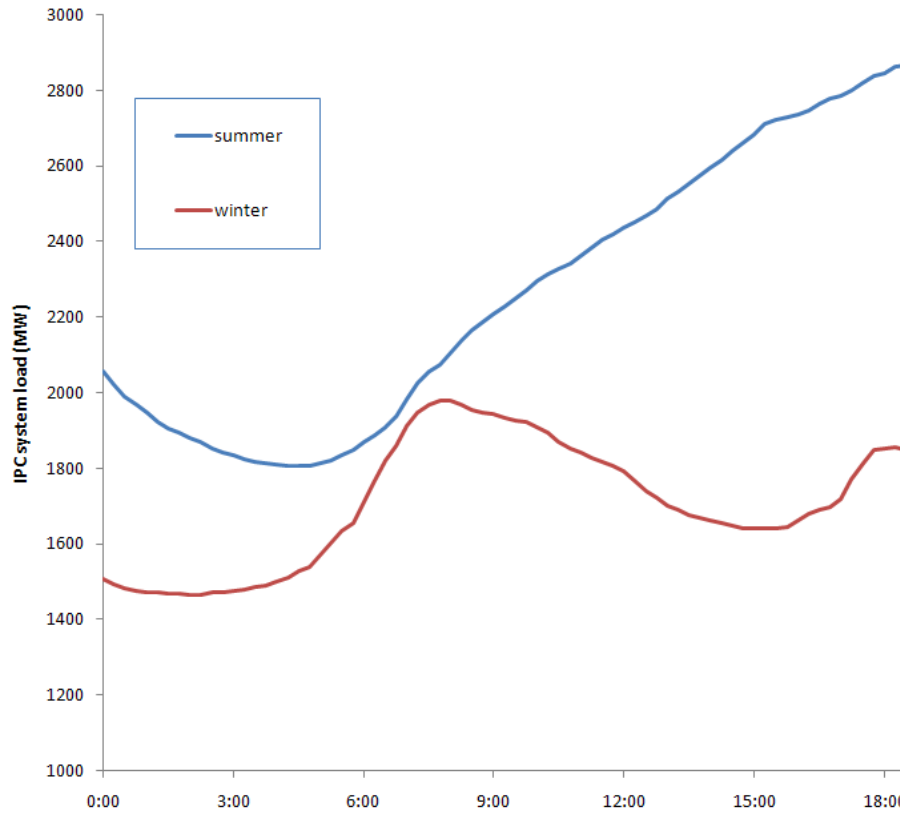


Load



*Resources (including
wind generation)*

Load Variability



Respond to System Variability

*Load net wind moves up ↔
another resource(s) moves down*

*Load net wind moves down ↔
another resource(s) moves up*



IPC Resources for Responding



Hells Canyon Complex

- *Brownlee*
 - *5 generating units totaling 585 MW*
 - *Nearly one million acre-feet storage*
- *Oxbow*
 - *4 generating units totaling 190 MW*
- *Hells Canyon*
 - *3 generating units totaling 392 MW*
- *Total Complex*
 - *Normal water year about 68% of hydroelectric generation & 35% of total energy generated*



Jim Bridger & North Valmy Coal

- *Bridger*

- *Rock Springs, WY*
- *IPC owns $\frac{1}{3}$ share*
- *4 coal-fired generating units totaling 771 MW (IPC share)*

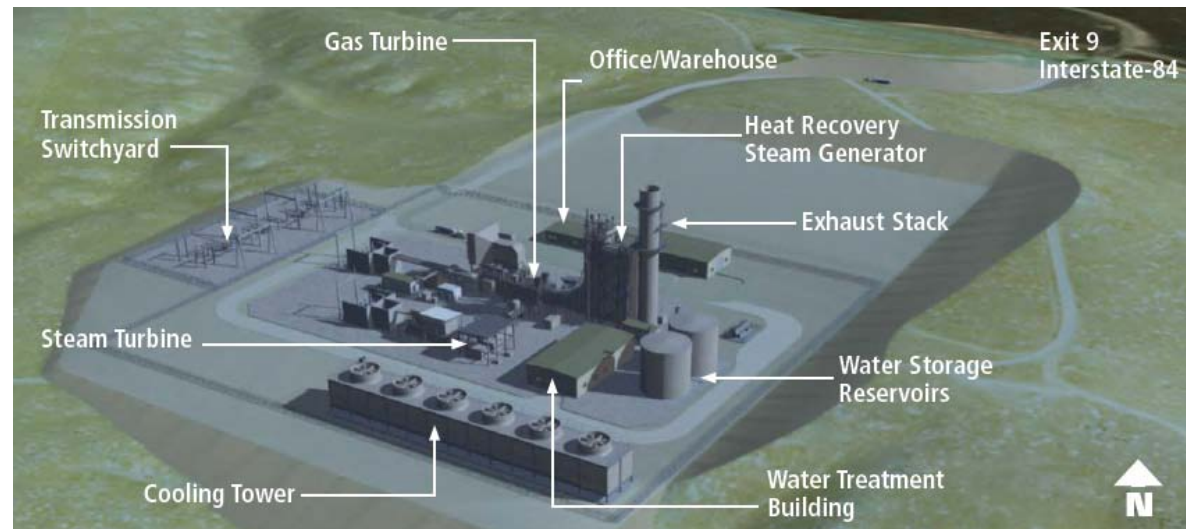
- *Valmy*

- *Valmy, NV*
- *IPC owns $\frac{1}{2}$ share*
- *2 coal-fired generating units totaling 284 MW (IPC share)*



Langley Gulch Power Plant

- *Langley Gulch*
 - *Payette County, ID*
 - *Combined-cycle combustion turbine (300 MW)*
 - *Scheduled online July 2012*



Gas Peakers

- *Danskin Power Plant*
 - *Mountain Home, ID*
 - *One 171 MW & two 46 MW natural gas-fired simple cycle combustion turbines*
- *Bennett Mountain Power Plant*
 - *Mountain Home, ID*
 - *173 MW natural gas-fired simple cycle combustion turbine*



Wind Integration – Balancing Reserve

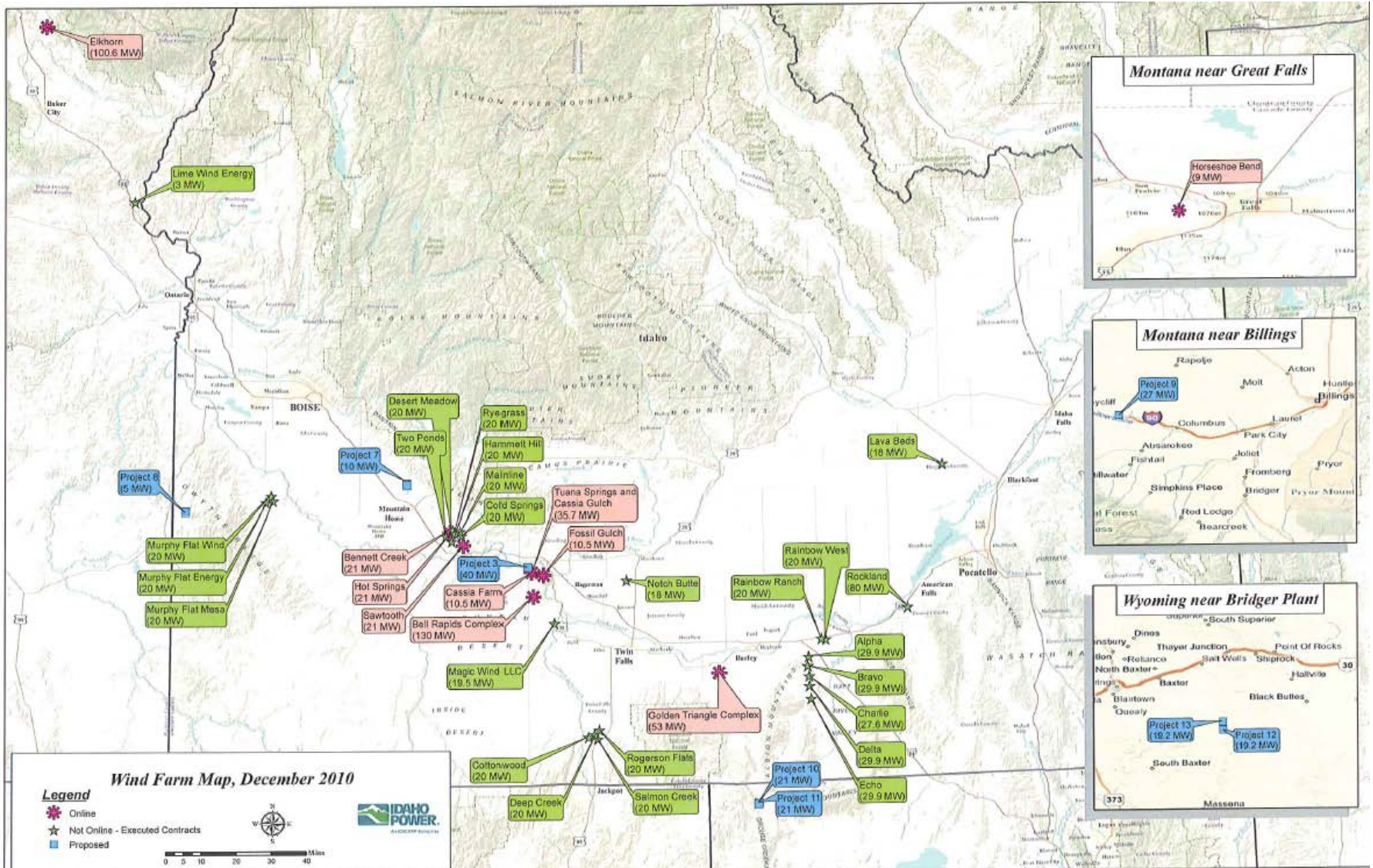
- *IPC resources having balancing reserve capability (e.g. Hells Canyon Complex) are operated differently to integrate wind*
- *This operation is less optimal & comes at a cost*
- *System reliability is not compromised*



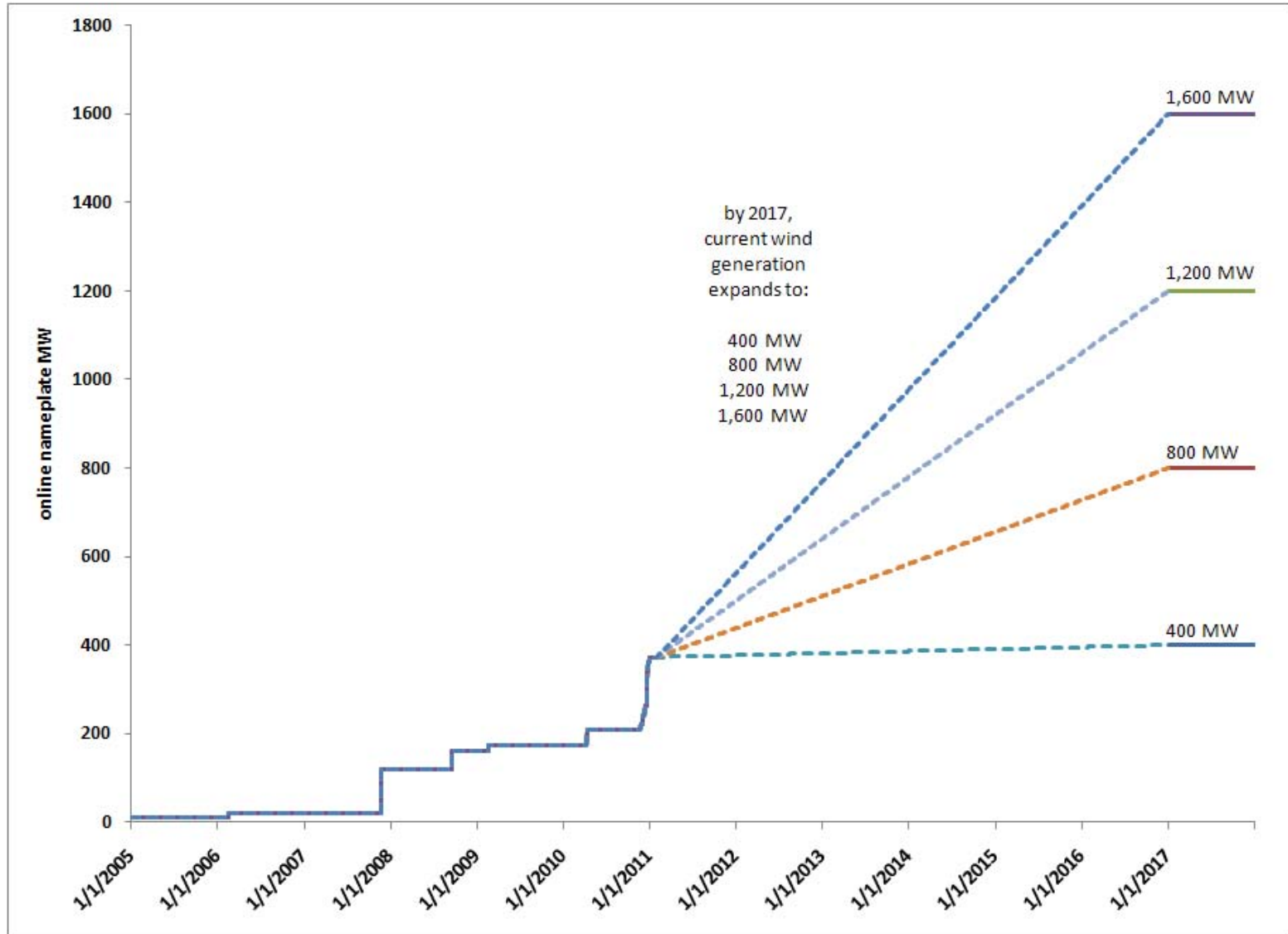
Wind Build-outs



Idaho Power & Wind Generation



Wind Build-out Scenarios



Wind Integration Public Workshop – March 16, 2011



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