Northwest Power and Conservation Council

November 3, 2005

MEMORANDUM

TO: **Power Committee**

FROM: **Jeff King**

SUBJECT: Briefing regarding recent generating plant construction

At least 1375 megawatts of generating capacity is currently under construction or has been completed in the Northwest this year. This represents a 2 percent increase in potential energy production and 3 percent increase in regional generating capacity. Continuing a trend, the largest fraction of new capacity (46%) now consists of windpower. Because of the low capacity factor of wind, the largest fraction in terms of energy remains natural gas. Natural gas comprises the second largest component of new capacity (45%), dominated by the 399 megawatt Portland General Electric Port Westward combined-cycle plant, due for completion in 2007. The remaining gas-fired capacity consists of two peaking projects. A 113 MW coal-fired unit in eastern Montana and several "niche" bioresidue plants comprise the remaining megawatts.

Because they were committed prior to completion of the 5th Plan, the natural gas facilities were "grandfathered" in the analyses leading to the plan. The level of wind construction is unprecedented, however, and both exceed plan assumptions regarding near-term development, and precede the plan's portfolio timing by several years. Wind development is driven by favorable economics resulting from high natural gas prices, extension of the federal production tax credit and the risk mitigation value of a "free fuel", CO2-free resource. A lost-opportunity perception is likely also at work since further extension of the production tax credit is highly uncertain. Any project in-service prior to the end of 2007 will benefit from ten years of tax credit. Failure of Congress to extend the PTC beyond 2007 might result in abrupt cessation of windpower construction, particularly if natural gas prices decline.

Despite an overall regional surplus, the region's IOUs appear to desire to control healthy individual resource portfolios. Nearly 85% of the output of these new projects (where known) will go to regional IOUs.

Though exceeding the rate of development anticipated or called for in the 5th Plan, this development is consistent with several of the Plan's action items. In particular, action GEN-8 calls for the development of five commercial-scale wind projects at diverse geographic areas through 2009, totaling at least 500 MW in capacity. "By-the-numbers", current construction will meet that objective. Less certain is whether the developers of these projects will provide data and prepare for future step-out development at these sites as called for in the plan. The

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increasing interest in bioresidue energy recovery and small-scale cogeneration facilities is encouraging and consistent with several 5th Plan action items.

The PowerPoint slides to be used for the briefing area are attached. No committee decision or other action is required.

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Generating Plant Construction Update

Jeff King

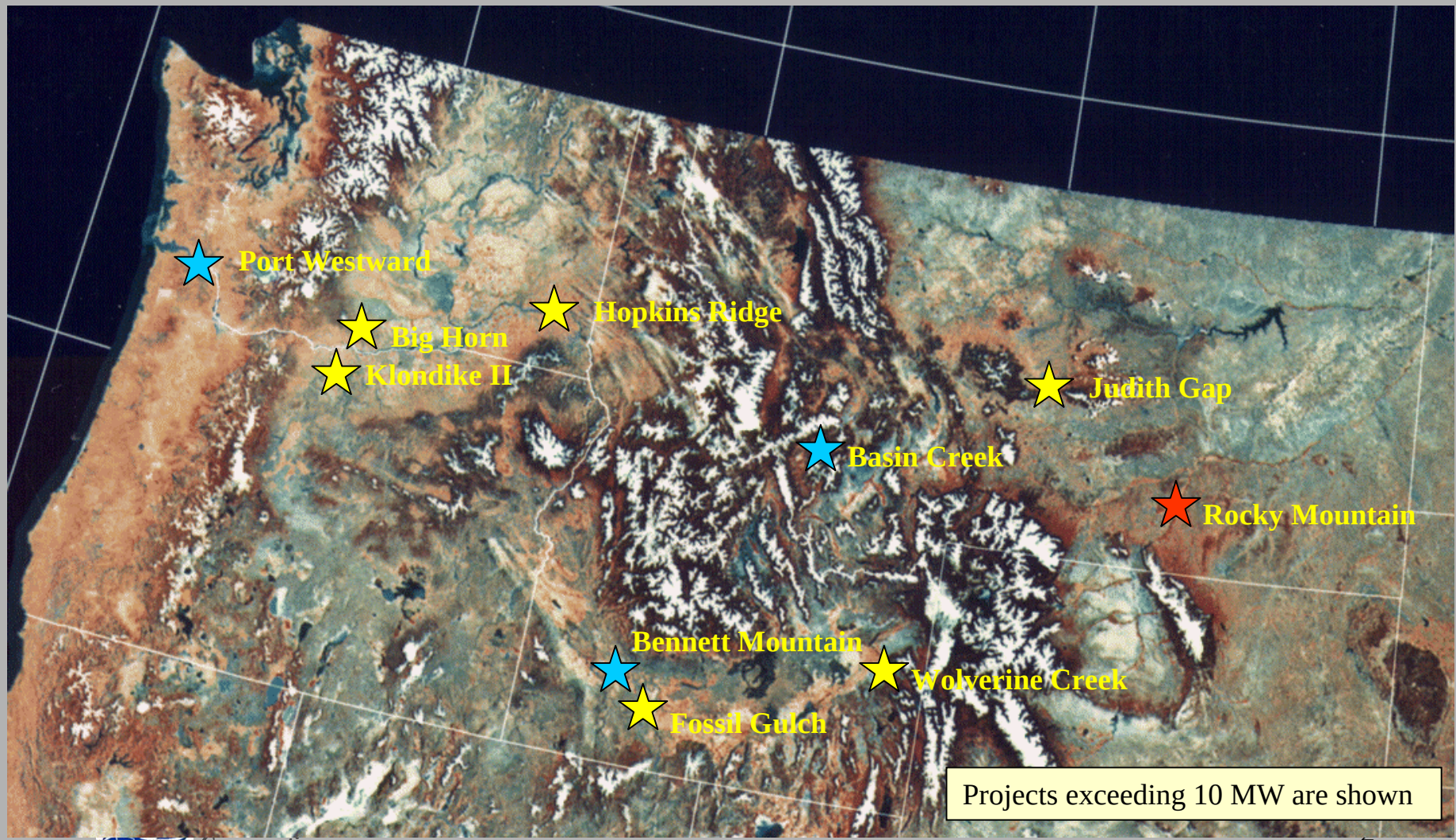
Northwest Power anc Conservation Council

Power Committee

Coeur d'Alene, ID

November 16, 2005

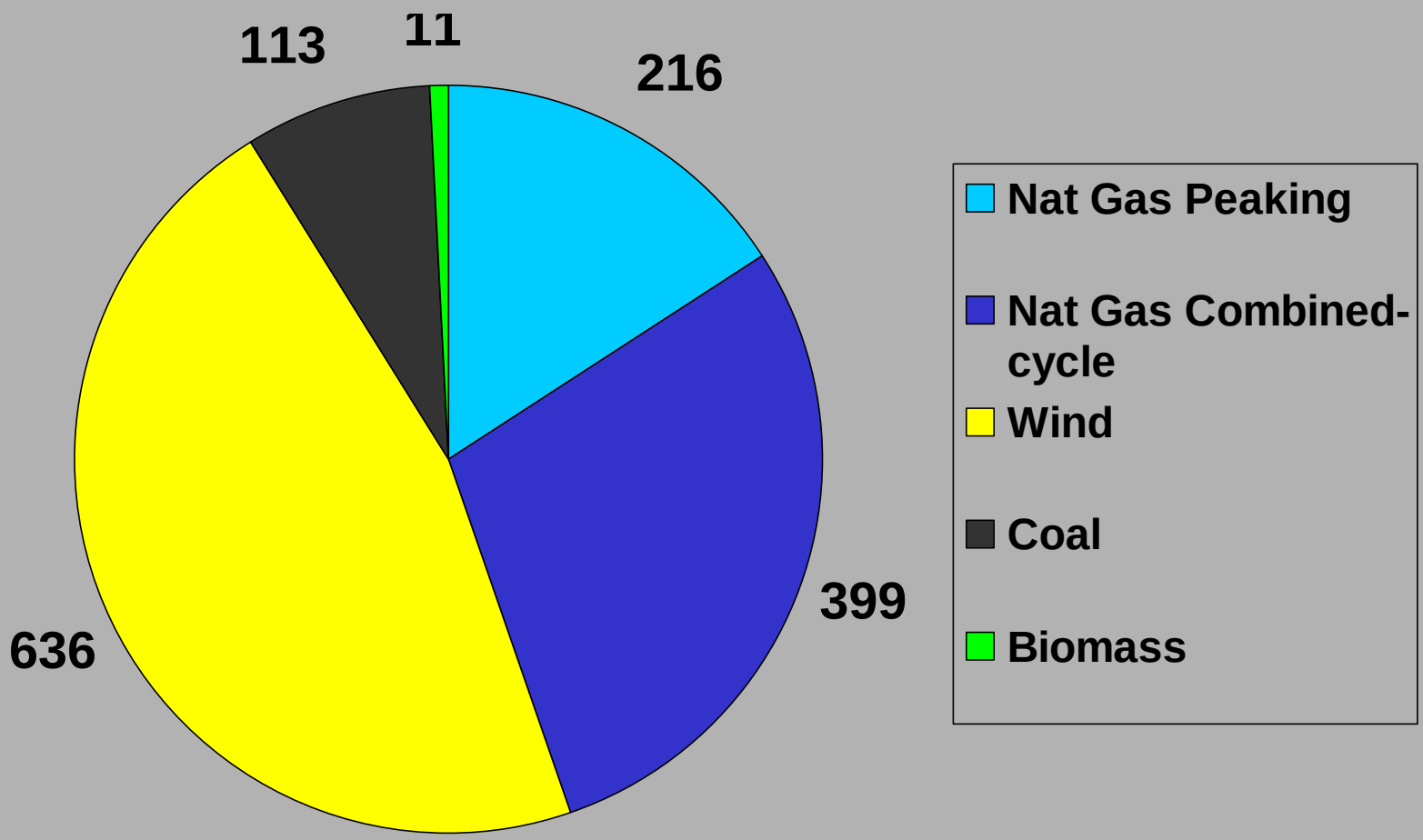
1375 MW of new generating capacity is under construction or in service in 2005



Projects exceeding 10 MW

Project	MW	Type	Owner/Cust	Location	Status
Basin Creek	54	Nat gas IC	Basin Ck/NWE	Butte, MT	UNC (05)
Bennett Mountain	162	Nat gas GT	Idaho Pwr/IPC	Mountain Home, ID	OPR (05)
Big Horn	200	Wind	PPM/?	Bickleton, WA	UNC 06
Fossil Gulch	11	Wind	Exergy/IPC	Hagerman, ID	OPR (05)
Hopkins Ridge	150	Wind	PSE/PSE	Garfield Co., WA	UNC (05)
Judith Gap	135	Wind	Invenergy/NWE	Wheatland Co., MT	OPR (05)
Klondike II	75	Wind	PPM/PGE	Sherman Co. OR	OPR (05)
Port Westward	399	Nat gas CC	PGE/PGE	Columbia Co., OR	UNC (07)
Rocky Mountain	113	Coal ST	Centennial/Powerex	Hardin, MT	UNC (05)
Wolverine Creek	65	Wind	Invenergy/Pacific	Bonneville & Bingham Cos., ID	UNC (05)

Additions are largely comprised of gas & wind (Capacity in MW)



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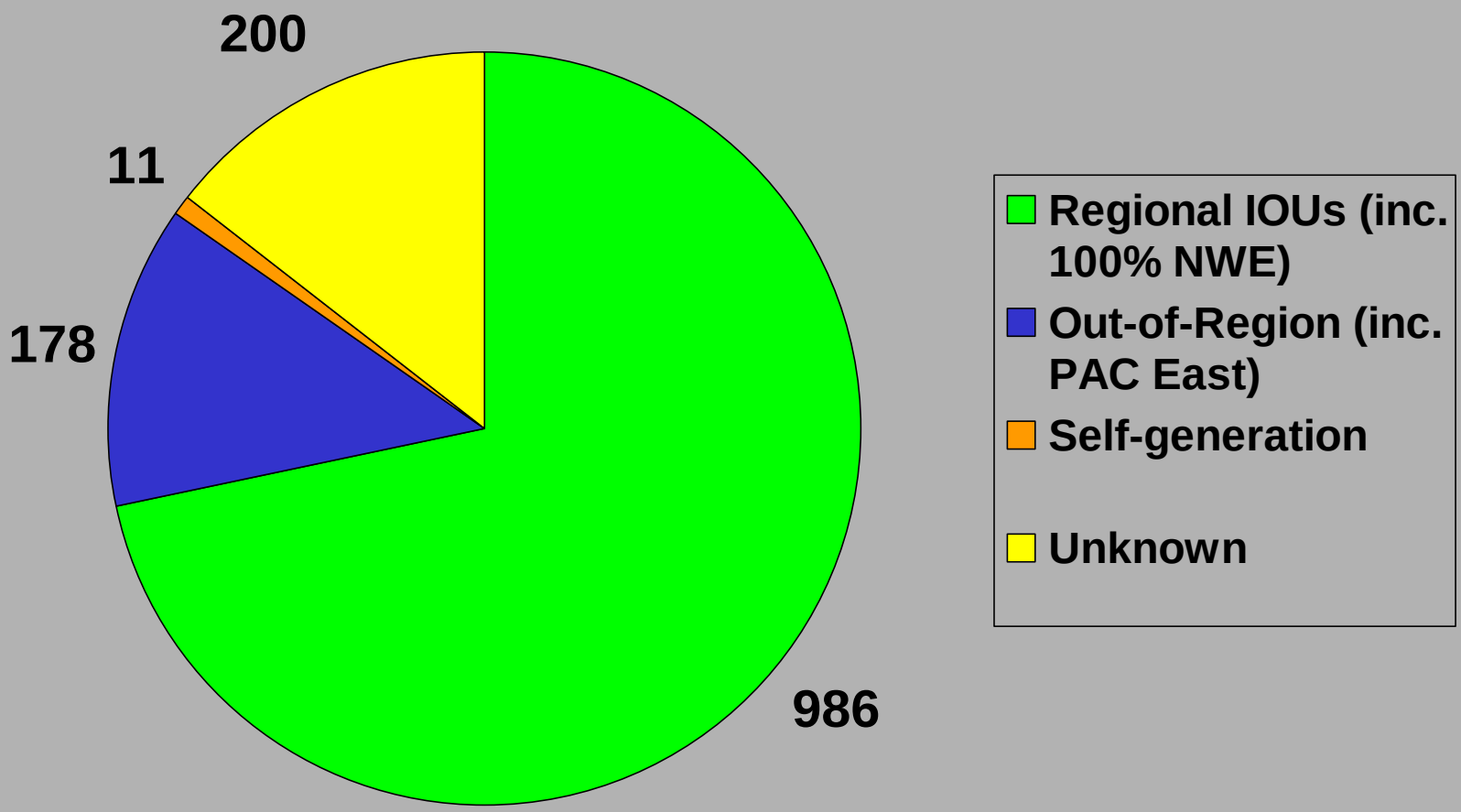
Loads served (capacity in MW)



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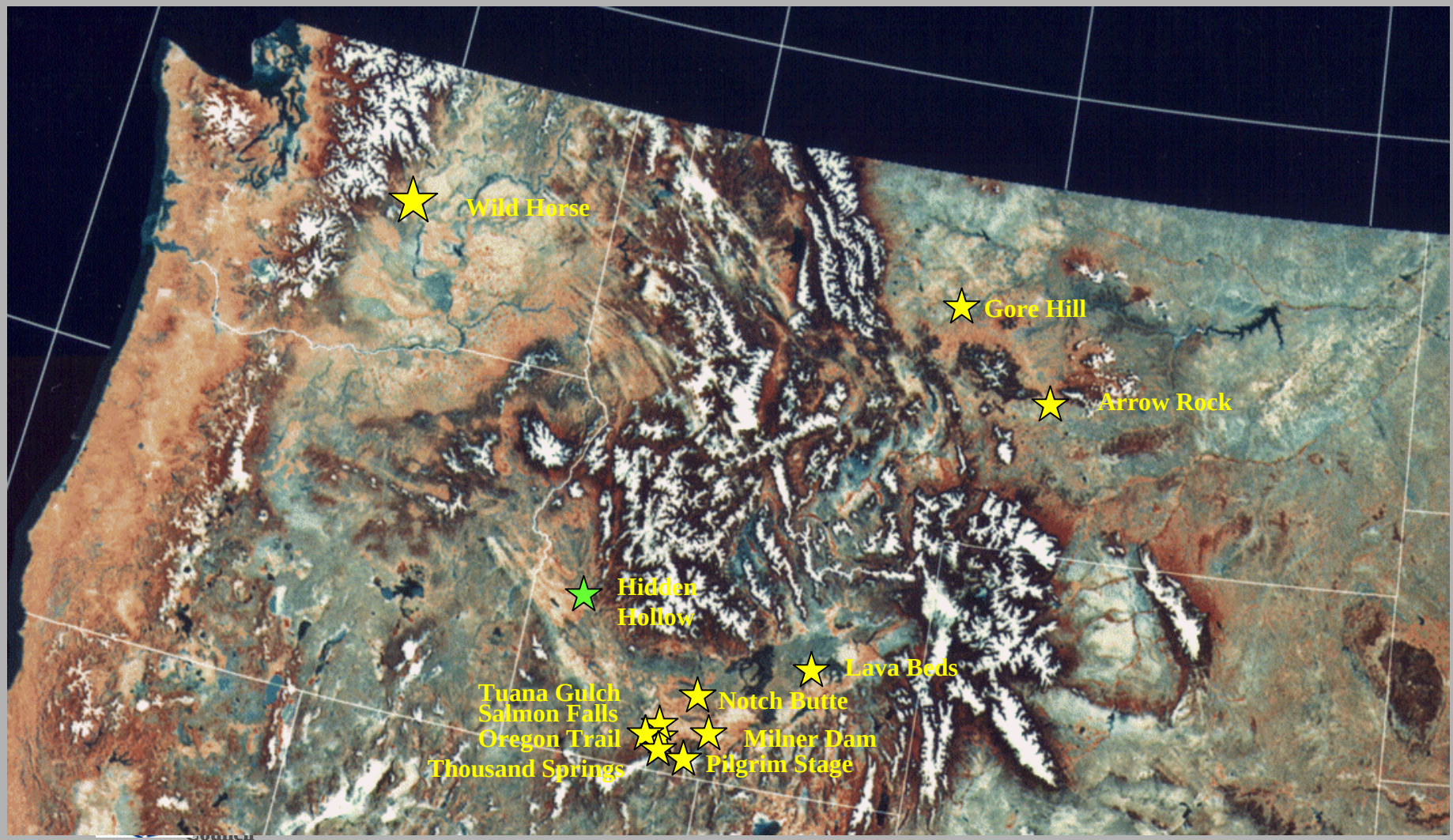
380 MW, or more of additional completions are anticipated in 2006 & 07, largely wind



Utility IRP/RFP process & renewable incentives have been key drivers

	IRP/RFP	PTC	Other
Basin Creek	X		
Big Horn		X	??
Bennett Mountain	X		
Fossil Gulch		X	QF
Hopkins Ridge	X	X	
Judith Gap	X	X	
Klondike II	X	X	SBC[1]
Port Westward	X		
Rocky Mountain			
Wolverine Creek	X	X	

1. Ultimately not required to achieve competitive cost.

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How does this activity comport with the 5th Power Plan?

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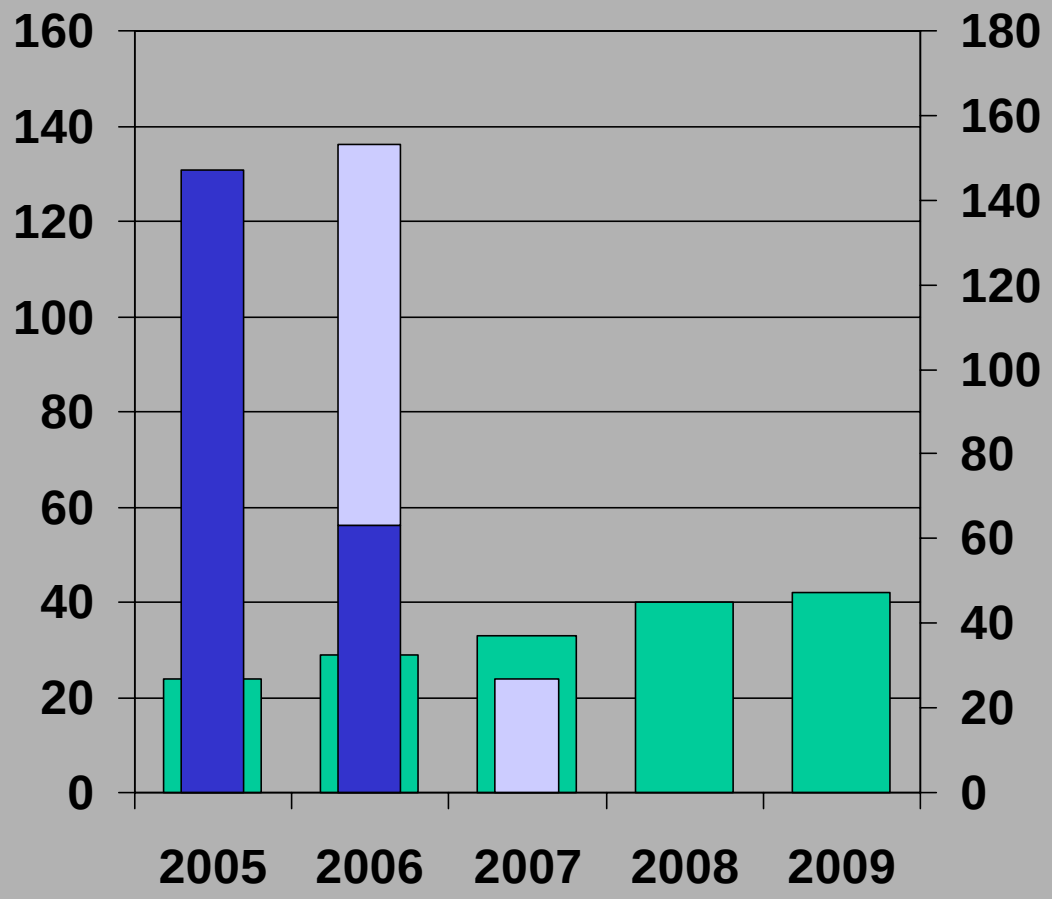
Three projects totaling 674 MW are specifically "grandfathered" in plan

- Basin Creek
- Big Horn
- **Bennett Mountain**
- Fossil Gulch
- Hopkins Ridge
- Judith Gap
- Klondike II
- **Port Westward**
- **Rocky Mountain**
- Wolverine Creek

Plan assumes ~170 aMW of renewables or CHP are developed through 2009



200% or more of assumed development is expected to be in-service by end of 2007.

Not all will serve in-region loads.

Additional wind completions are likely for 2007

Post-2007 pace will depend on PTC, gas prices & load growth.

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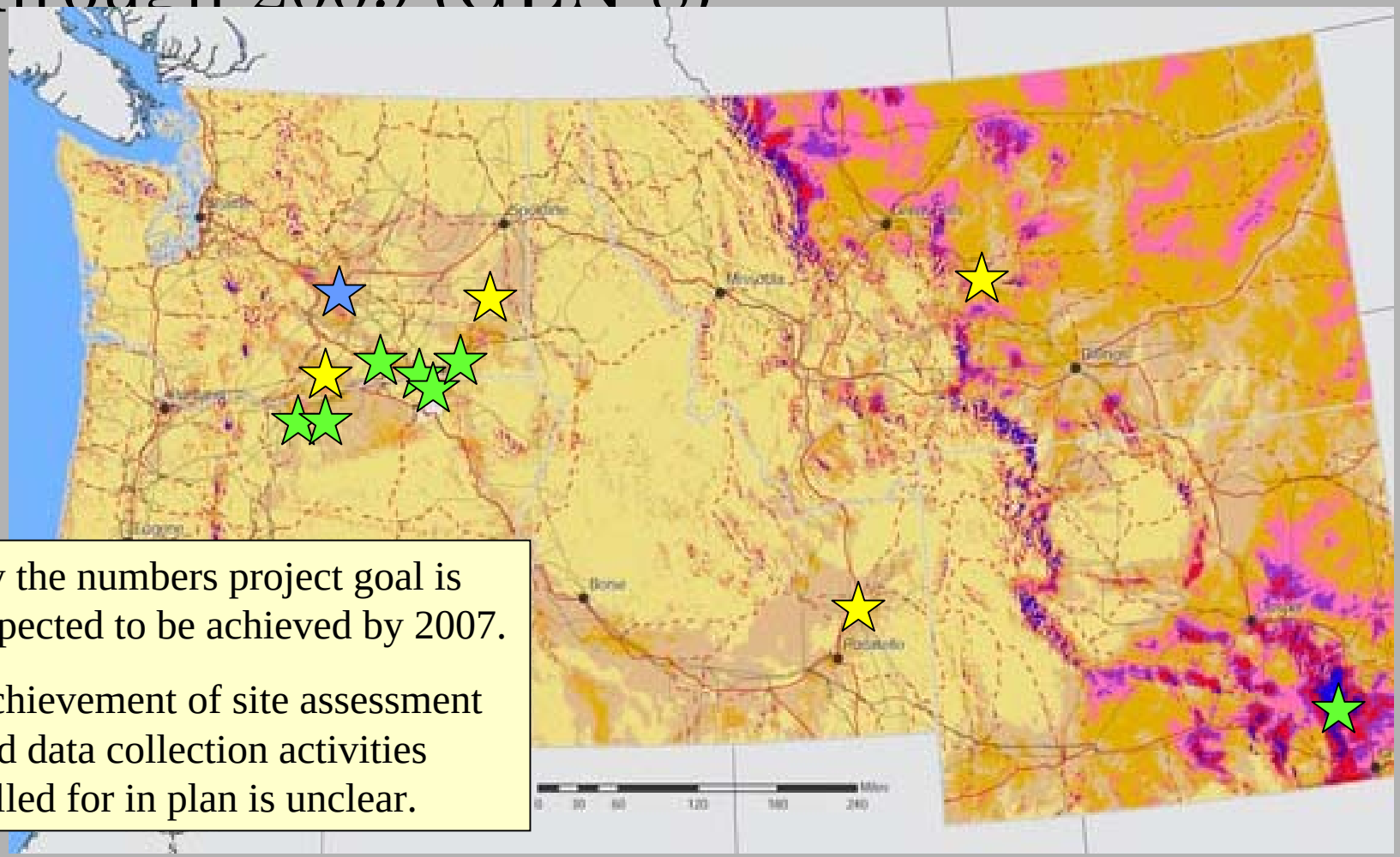
Plan calls for five commercial-scale wind projects at diverse geographic areas through 2009 (GEN-8)



By the numbers project goal is expected to be achieved by 2007.

Achievement of site assessment and data collection activities called for in plan is unclear.

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Acquire cost-effective lost opportunity renewable and cogeneration resources (GEN-5) Examples:

- Oregon Energy Trust
  - Douglas Co. Forest Products Cogen (2.6 MW)
  - Dry Creek landfill gas recovery (2.5 MW)
  - Gresham (0.4 MW), Corvallis (0.05 MW) WWTP energy recovery
  - Albany hydro rehab (0.5 MW)
- Idaho QF requirements
  - Hidden Hollow landfill gas recovery (3.2 MW)
- Utility RFPs
  - Sumas Compresser (5 MW, to Puget)
  - Thompson River Cogen (12.5 MW, to NorthWestern)
- Owner/Consumer motivation
  - South Treatment Plant Cogen (8 MW, King Co, WA)
  - Cedar Hills landfill energy recovery (26 MW, King Co, WA)

Also, numerous solar photovoltaic and some community and small-scale wind initiatives throughout region. These are rarely lost opportunities or cost-effective as defined by the Council.

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In summary...

- Generating project construction substantially exceeds amounts assumed in the plan.
- Predominent resources are wind and gas, followed by some coal and a scattering of small biomass and CHP projects.
- The majority of projects result from utility IRP/RFP processes, and will serve regional IOU loads.
- Wind construction is highly dependent on the federal production tax credit and is currently limited by turbine availability. Development beyond the current 2007 PTC expiration date is uncertain.
- Efforts to secure cost-effective “niche” renewable and CHP project opportunities are increasing, but are not available throughout the region.