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July 3, 2008

MEMORANDUM

TO: Power Committee

FROM: Jeff King, Senior Resource Analyst

SUBJECT: Treatment of Non-hydro and IPP resources for the resource adequacy assessment

At the June Power Committee meeting in Spokane, members of the Power Committee requested additional background information concerning the treatment of non-hydro and independent power producer (IPP) generating resources for the assessment of resource adequacy. Staff will provide additional information regarding the treatment of these resources for the resource adequacy assessment at the July Power Committee meeting in Kalispell. The attached PowerPoint slides will accompany and supplement the discussion.

Treatment of Non-hydro and IPP Resources for the Resource Adequacy Assessment

Jeff King

Northwest Power and Conservation Council

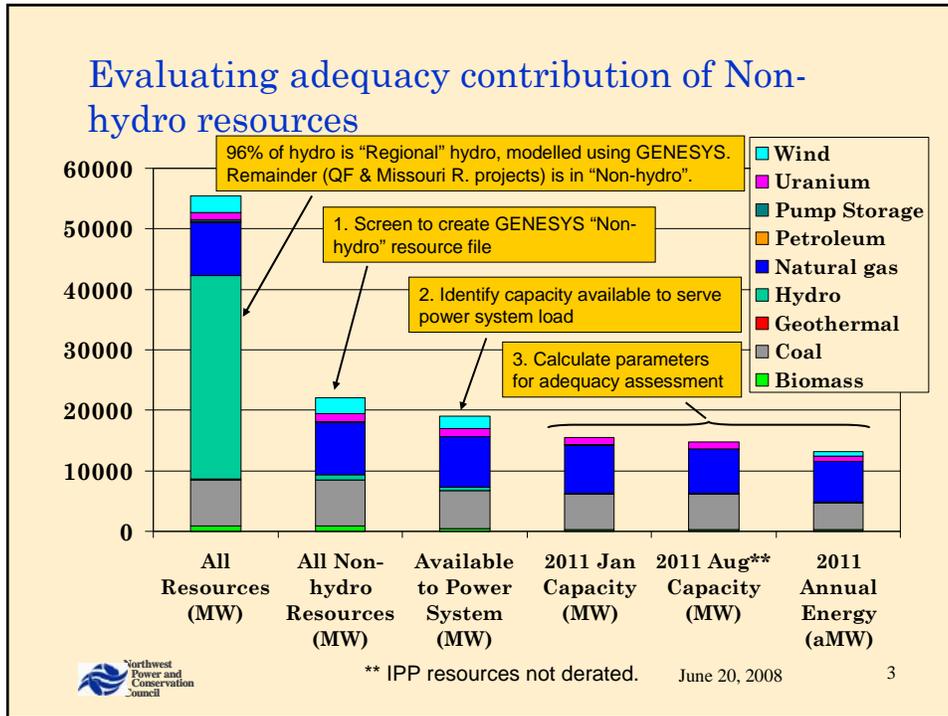
Kalispell, MT

July 15, 2008

Evaluation of Non-Hydro resources for the resource adequacy assessment

Resources not included in John's hydro modelling,
including thermal, wind and Missouri R. and small
hydro.

Includes "IPP" resources



First screen: Exclusions to create GENESYS GenRes "Thermal" Resource File

Existing Resources Dataset	593 projects/units	55,146 MW
Regulated and Independent hydro	157	32,444
Projects in the MRO reliability area	7	300
Projects serving WAPA load	5	485
Projects less than 0.5 MW capacity	77	18
Idle units	17	228
Suspended construction	2	16
Projects with "Unknown" status	1	< 1 MW
Scheduled retirements prior to 2011	1	15
Net to GenRes file	322**	22,049**

** Net adjustment is not the sum of individual line items because of projects meeting more than one screening criterion. June 20, 2008 4

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Second screen: Exclude capacity not available to meet 2011 regional load

GenRes file	322 projects/units	22,049 MW
Self-generation	42 (inc. 3 partial)	644
60% of NWE owned or contracted resources	15	719
Projects w/long-term out-of-region contracts	7 (inc. 5 partial)	815
Projects w/unknown loads	39	325
Load-side emergency service projects w/o known DR contracts	3	30
QF contracts expiring by Jan 2011	6	18
Non-firm term QF contracts	1	1
Nameplate “thermal” capacity available to the region	226 full or partial projects/units	19,439** Nameplate

** Net adjustment is not the sum of individual line items because of projects meeting more than one criterion. June 20, 2008



Calculate seasonal capacity and energy

	Capacity	Energy
All resources except as below	WECC winter capacity x NPCC monthly shape factors	WECC winter capacity x FOR adjustment x NPCC monthly shape factors
Resources with known operating hour limits	As above	WECC winter capacity x FOR adjustment x NPCC monthly shape factors x annual operating hour limit
Load-side DR capacity or remote emergency service capacity	As above	Assume none
QF & SPP resources not rated in WECC*	Zero (100% peak capacity derate)	Nameplate x FOR adjustment x NPCC monthly shape factors
Wind and Solar	Nameplate x NPCC monthly shape factors x 95% peak capacity derate	Nameplate x NPCC monthly shape factors

* WECC. Existing Generation and Significant Additions and Changes to System Facilities 2005 – 2014. January 2006 June 20, 2008



Proposed refinements

1. Consider Hardin & uncontracted portion of the unregulated share of Colstrip 4 as uncommitted IPPs.
2. Treat NWE purchase from PPL Montana as system sale rather than unit-contingent contracts.
3. Use monthly capacity and energy data from NRF or White Book (where available and shaped) in lieu of NPCC generic monthly shape factors.
4. Work w/BPA & PNUCC to secure long-term power purchase & QF contract info in future utility surveys
5. Include potential RPS or other future utility acquisitions?

Current assumptions generally err toward more conservative capacity and energy estimates.



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Evolution of the “IPP” resources and their treatment in the adequacy analysis

14 once & current, partially or wholly merchant plants.
Comprise 38% of total non-hydro January capacity.



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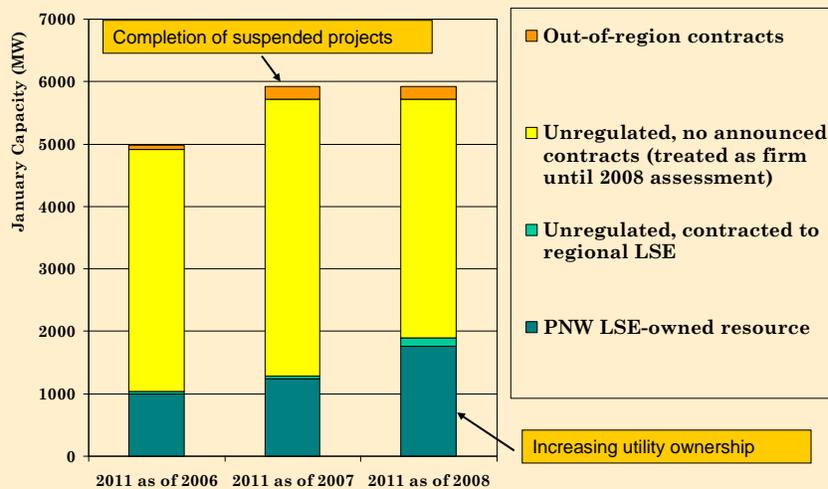
Principal PNW plants constructed or acquired (wholly or partially) for merchant sales

Plant	Type	Capacity	Service	Capsule history
Big Hanaford	Gas CC	248	2002	Built as merchant plant.
Boardman	Coal steam	585	1980	Utility-constructed. 15% share currently owned by General Electric Credit Corp and contracted to SDGE; 10% PNGC share contracted to Turlock Irrigation District.
Centralia 1 & 2	Coal steam	2 x 670	1972/73	Utility-constructed; purchased by TransAlta as merchant facility in 2000. 100 MW contract w/PGE thru 2015.
Chehalis	Gas CC	520	2003	Built as merchant plant; PacifiCorp acquisition announced 2008
Colstrip 4	Coal steam	740	1986	Built as utility plant, 30% MPC share now unregulated NWE asset w/90 MW contracted to NWE thru 2018, 21 MW thru Jul 2014
Coyote Springs 2	Gas CC	264	2003	Conceived as utility plant, built as merchant, subsequently acquired by Avista.
Grays Harbor	Gas CC	650	2008	Construction as merchant facility suspended in 2002; resumed 2007 for 2008 completion.
Hardin	Coal steam	109	2006	Output contracted to Powerex for unannounced market & contract sales
Hermiston Power	Gas CC	530	2002	Built as merchant plant.
Klamath Cogeneration	Gas CC	480	2001	Built by Klamath Falls w/output contracted to PPM Energy for mkt & contract sales. Acquired by PPM Energy (Iberdrola) Dec 2007.
Klamath Peakers	Gas peaker	100	2002	Built as merchant plant.
Lancaster	Gas CC	278	2001	Built as merchant plant, scheduled conversion to regulated asset by Avista by Jan 2010
Mint Farm	Gas CC	319	2008	Construction as merchant facility suspended in 2002; resumed 2007 for 2008 completion.
Morrow Power	Gas peaker	25	2001	Built as merchant plant.



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Power from plants constructed or acquired for merchant sales (ca. 2011 in all cases)



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