

SSG-WI Transmission Study

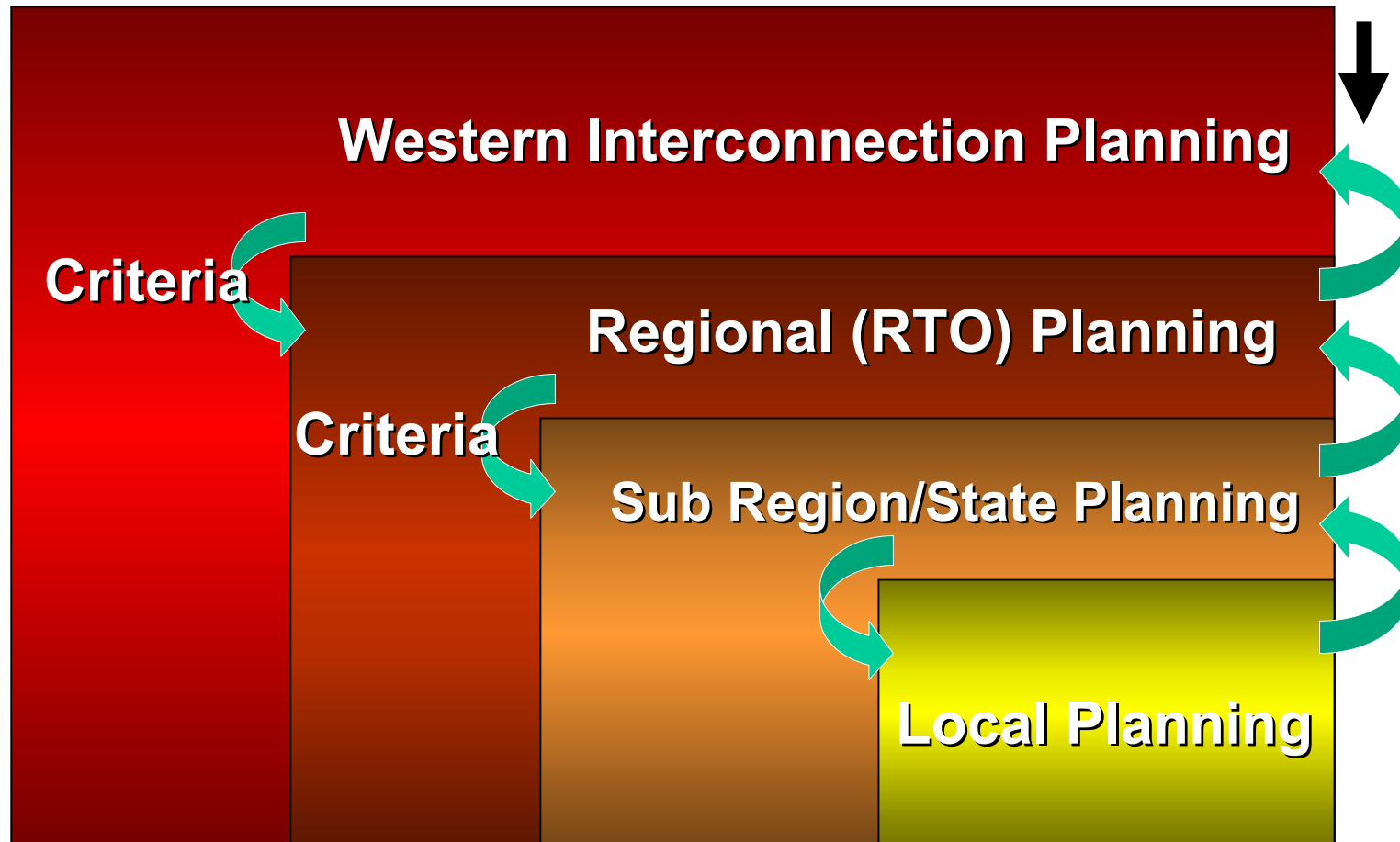
Planning Function Description Preliminary 2008 Results

June 20, 2003



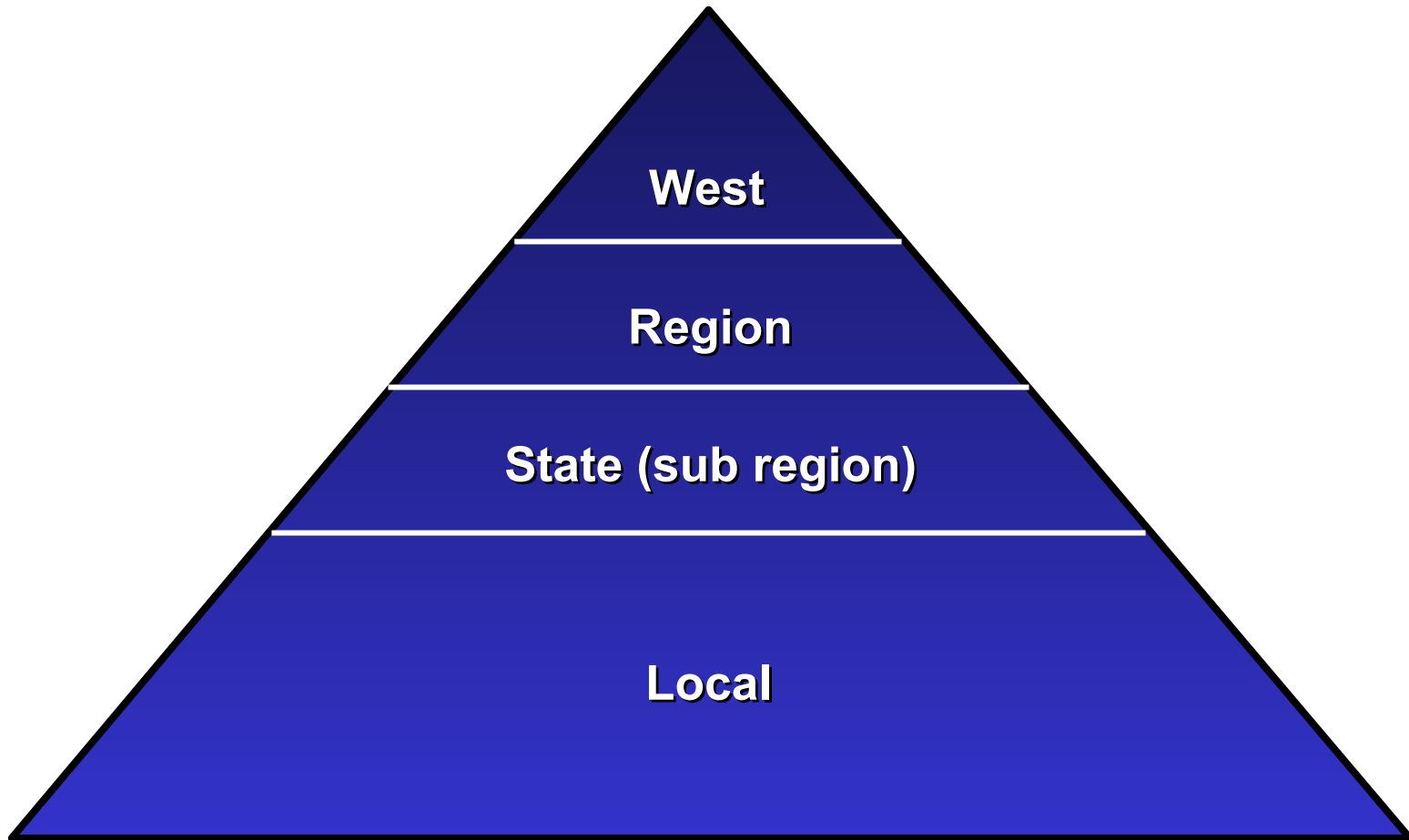
Planning in the West

Information (Plans) Coordination



Planning in the West

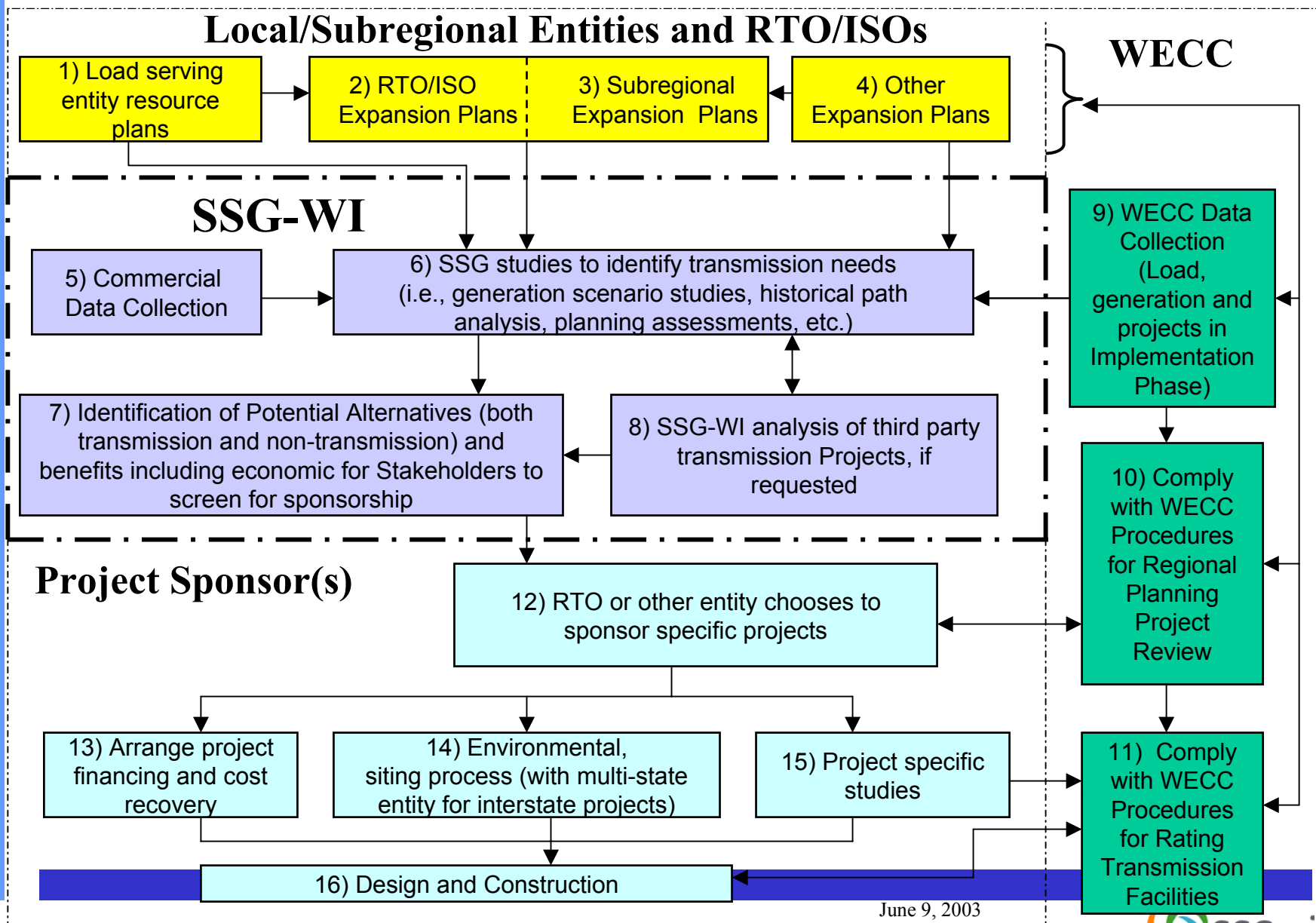
Plans to meet the needs for the:



SSG-WI Planning Function

- a) **Transmission & Generation inputs from LSEs, RTOs, Subregional Groups, generation developers, WECC, state agencies, etc.**
- b) **SSG-WI performs region-wide production/costing studies, identifies congestion and alternative solutions & provides information to market**
- c) **Project sponsors take projects thru WECC regional planning & rating process, permitting, siting and construction**

SSG-WI Planning Function's Interactions within the Western Interconnection



SSG-WI 2003 Study Program

◆ 2008 –

- based upon resources to be on line by Jan 2004 plus others on-line during 2004
- hydro and gas price sensitivities
- Transmission energized by 2008
- Identify potential areas of transmission congestion

◆ 2013 –

- looking at 3 resource scenarios: coal, renewable, and gas
- hydro and gas price sensitivities
- Identify areas of congestion & evaluate alternative solutions

Study Schedule

	<u>April</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>Aug</u>	<u>Sept</u>
2008 Base Simulation						
2008 Sensitivities						
2013 Base Simulation						
2013 Scenarios						
2013 Sensitivities						
Report Writing						

2008 Study Scenarios

2008 Simulation



**Generation
Under
Construction**

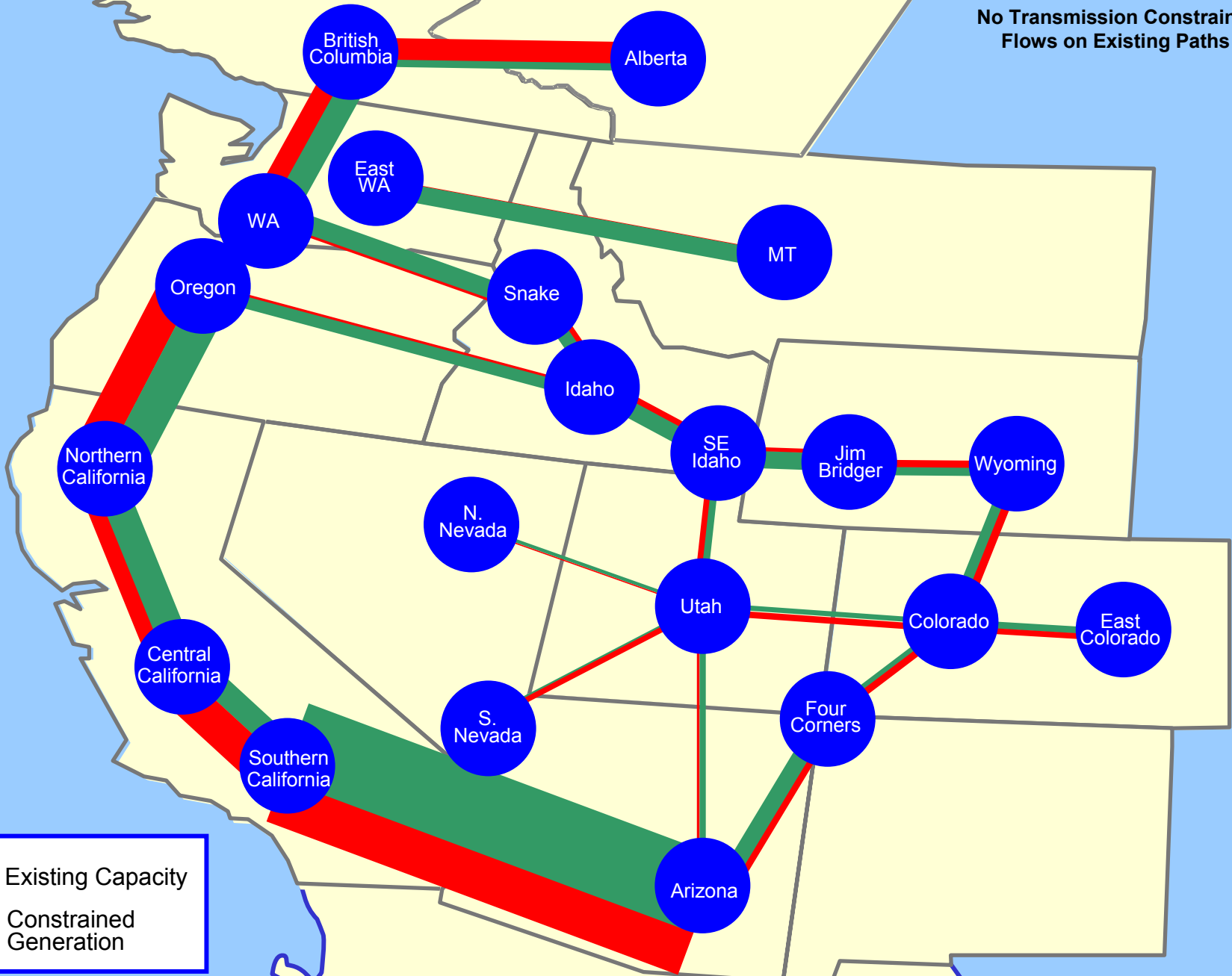


5 Gas/Hydro Sensitivities

	High Hydro	Average Hydro	Low Hydro
High Gas			
Average Gas			
Low Gas			

Transmission Paths

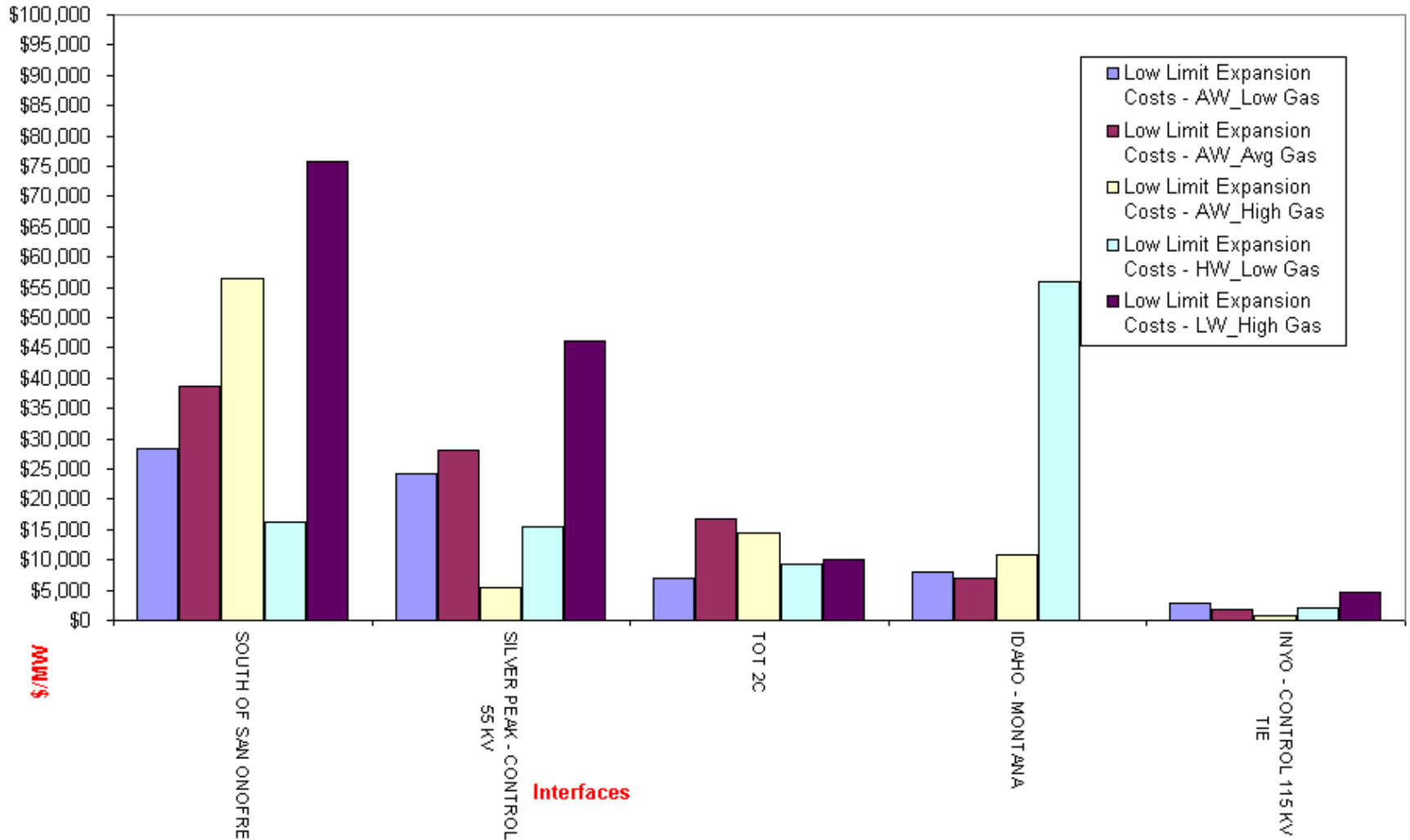
No Transmission Constraints
Flows on Existing Paths



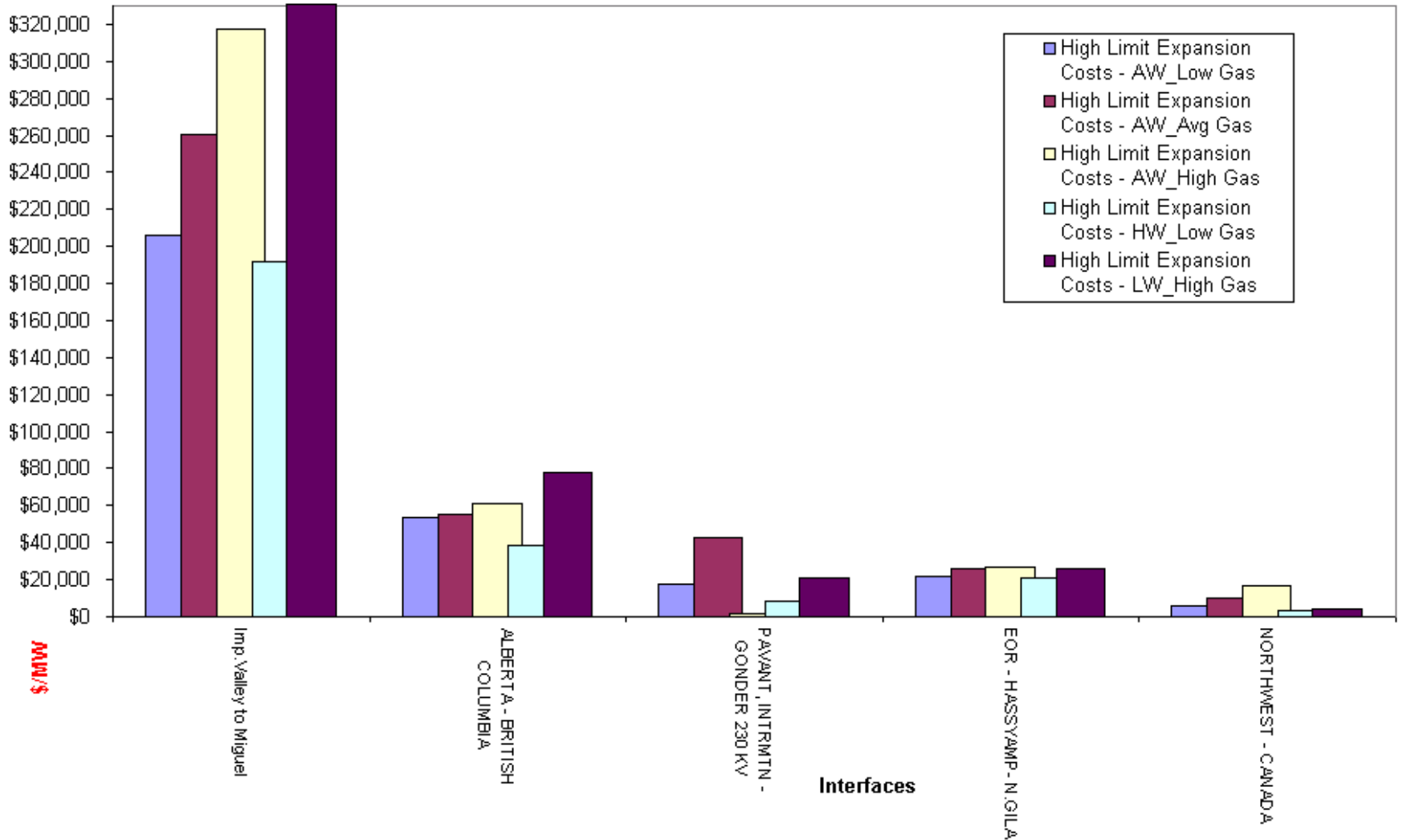
Legend

- Existing Capacity
- Constrained Generation

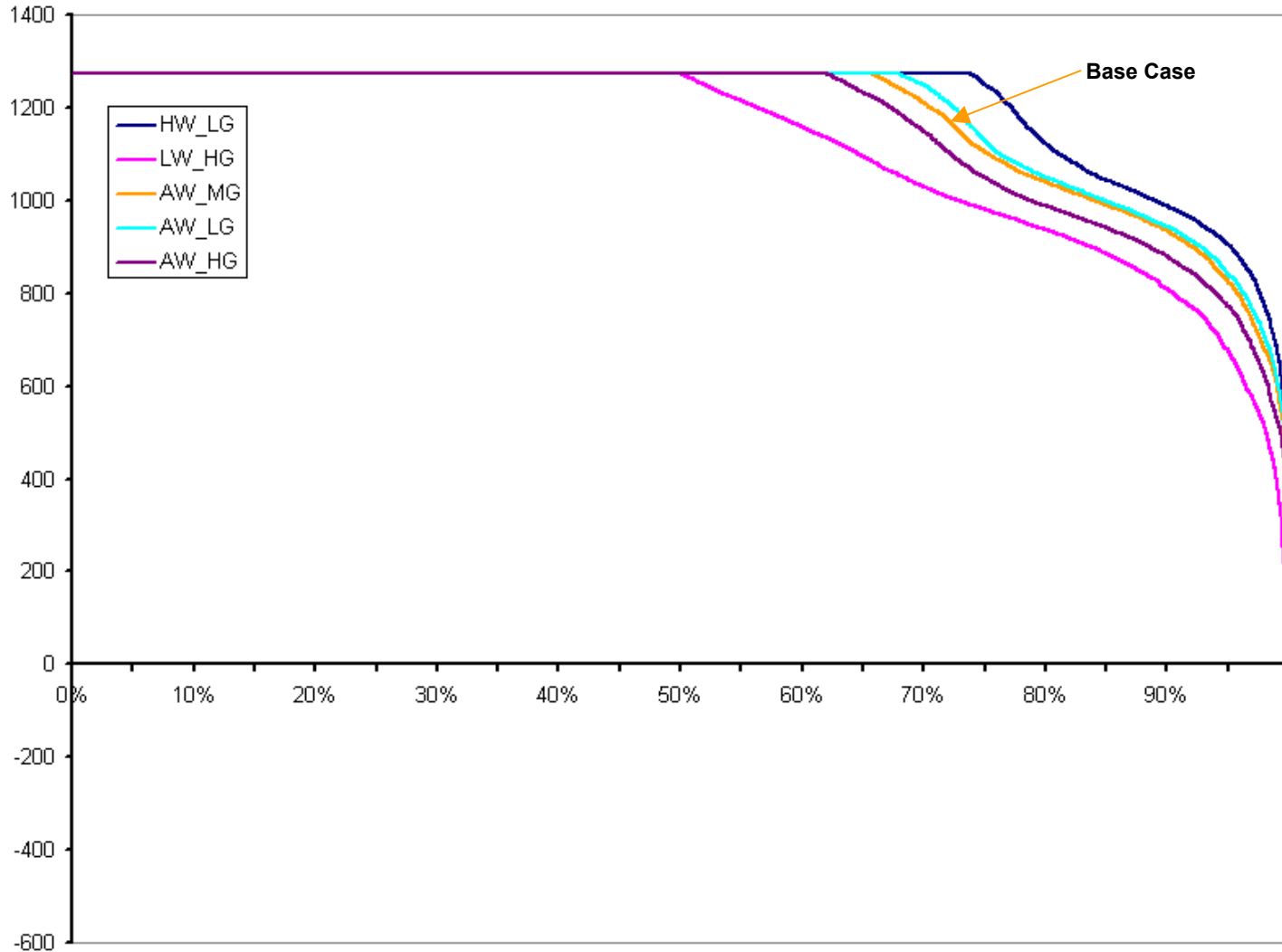
Interface Low Limit Expansion Shadow Prices



Interface High Limit Expansion Shadow Prices

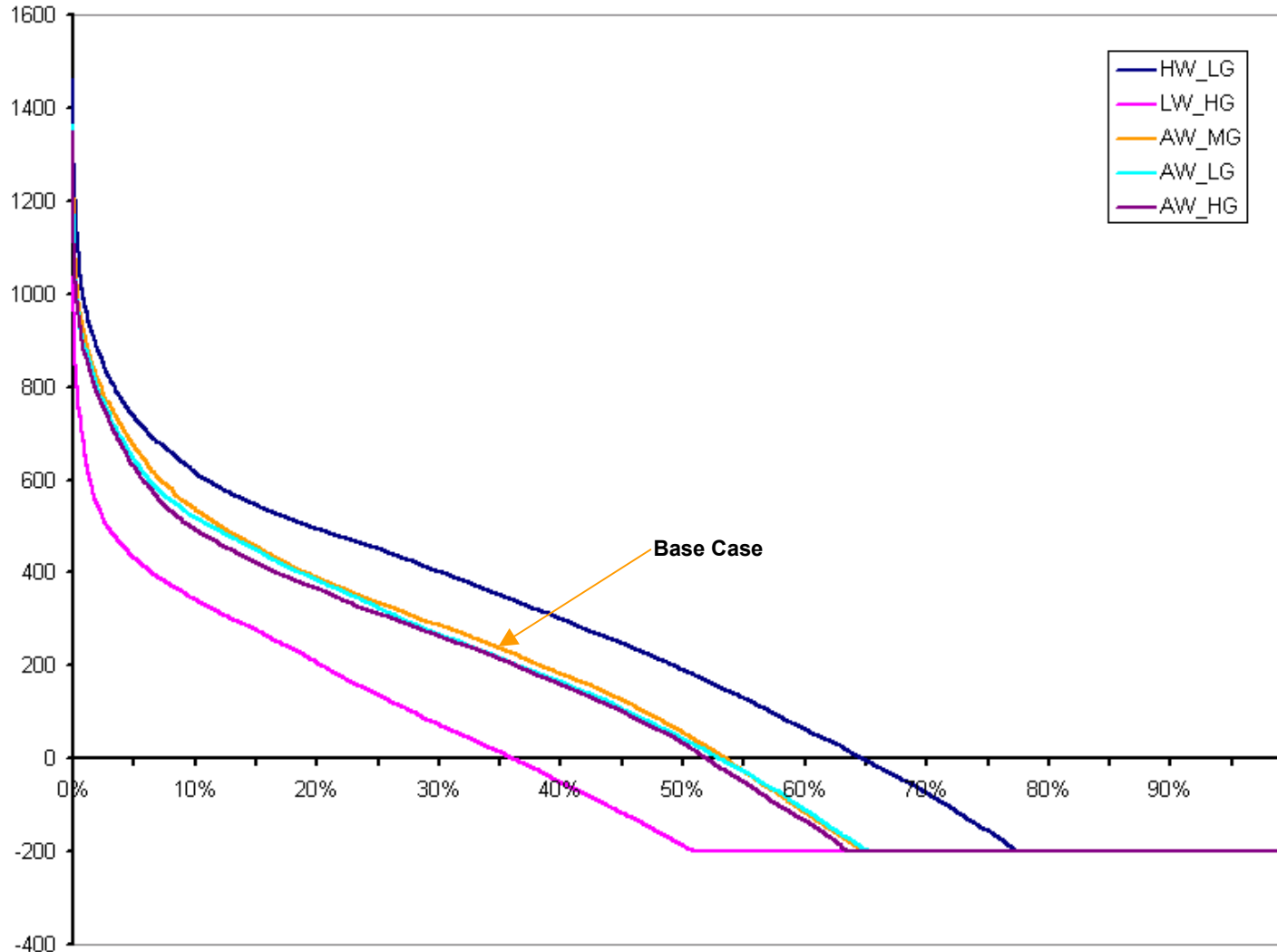


HASSYAMP- N.GILA (EOR line)



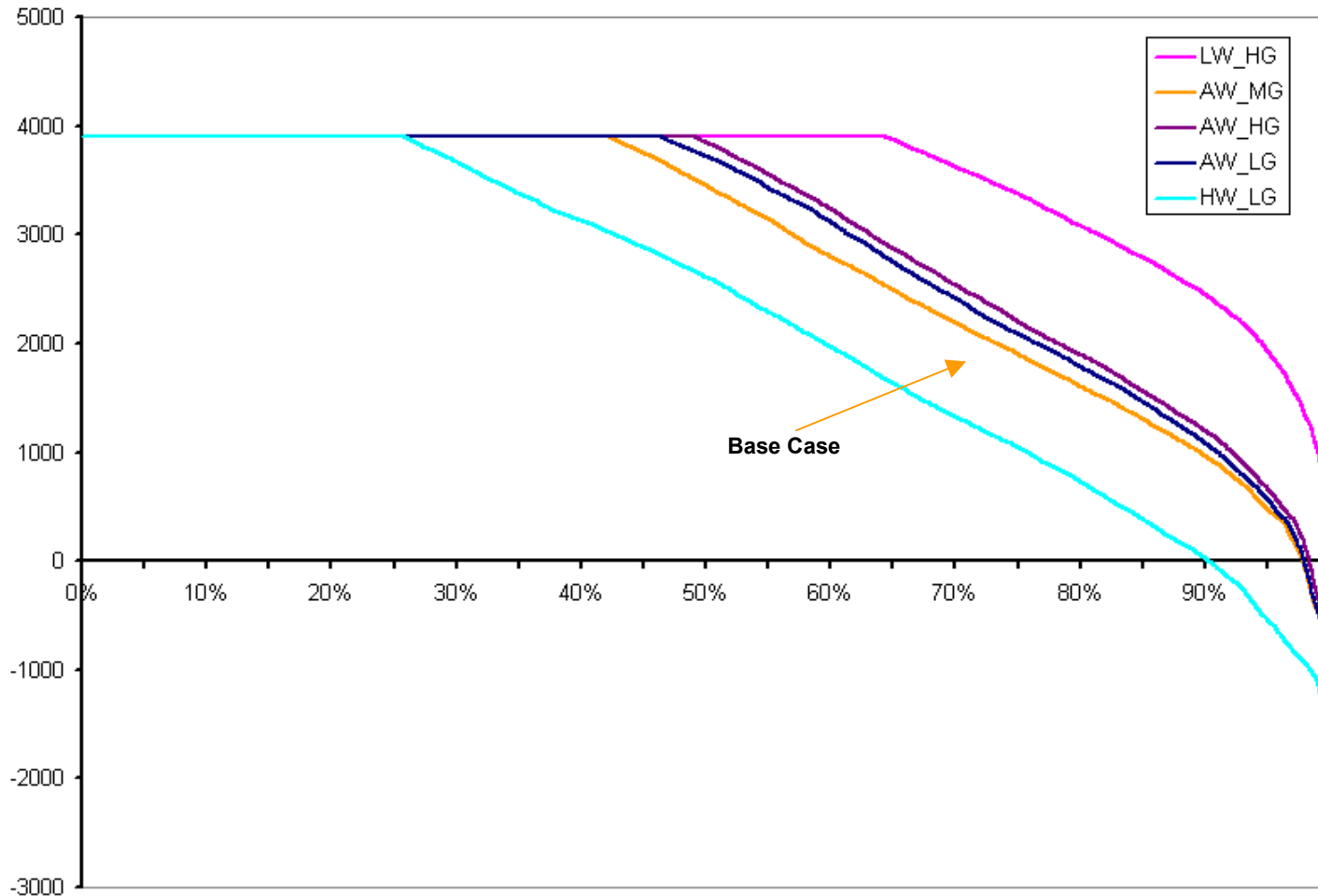
Interface	Costs - AW_Low Gas	Costs - AW_Avg Gas	Costs - AW_High Gas	Costs - HW_Low Gas	Costs - LW_High Gas
High Limit Expansion/MW Shadow Price	\$22,013	\$25,936	\$26,724	\$21,019	\$25,708
Low Limit Expansion/MW Shadow Price	\$0	\$0	\$0	\$0	\$0

SOUTH of SAN ONOFRE



Interface	Costs - AW_Low Gas	Costs - AW_Avg Gas	Costs - AW_High Gas	Costs - HW_Low Gas	Costs - LW_High Gas
High Limit Expansion/MW Shadow Price	\$0	\$0	\$0	\$0	\$0
Low Limit Expansion/MW Shadow Price	\$28,412	\$38,576	\$56,528	\$16,341	\$75,735

MIDWAY - LOS BANOS



Interface	Costs - AW_Low Gas	Costs - AW_Avg Gas	Costs - AW_High Gas	Costs - HW_Low Gas	Costs - LW_High Gas
High Limit Expansion/MW Shadow Price	\$7,104	\$8,083	\$12,046	\$3,166	\$18,394
Low Limit Expansion/MW Shadow Price	\$0	\$0	\$0	\$0	\$0