



Addressing Seams Issues

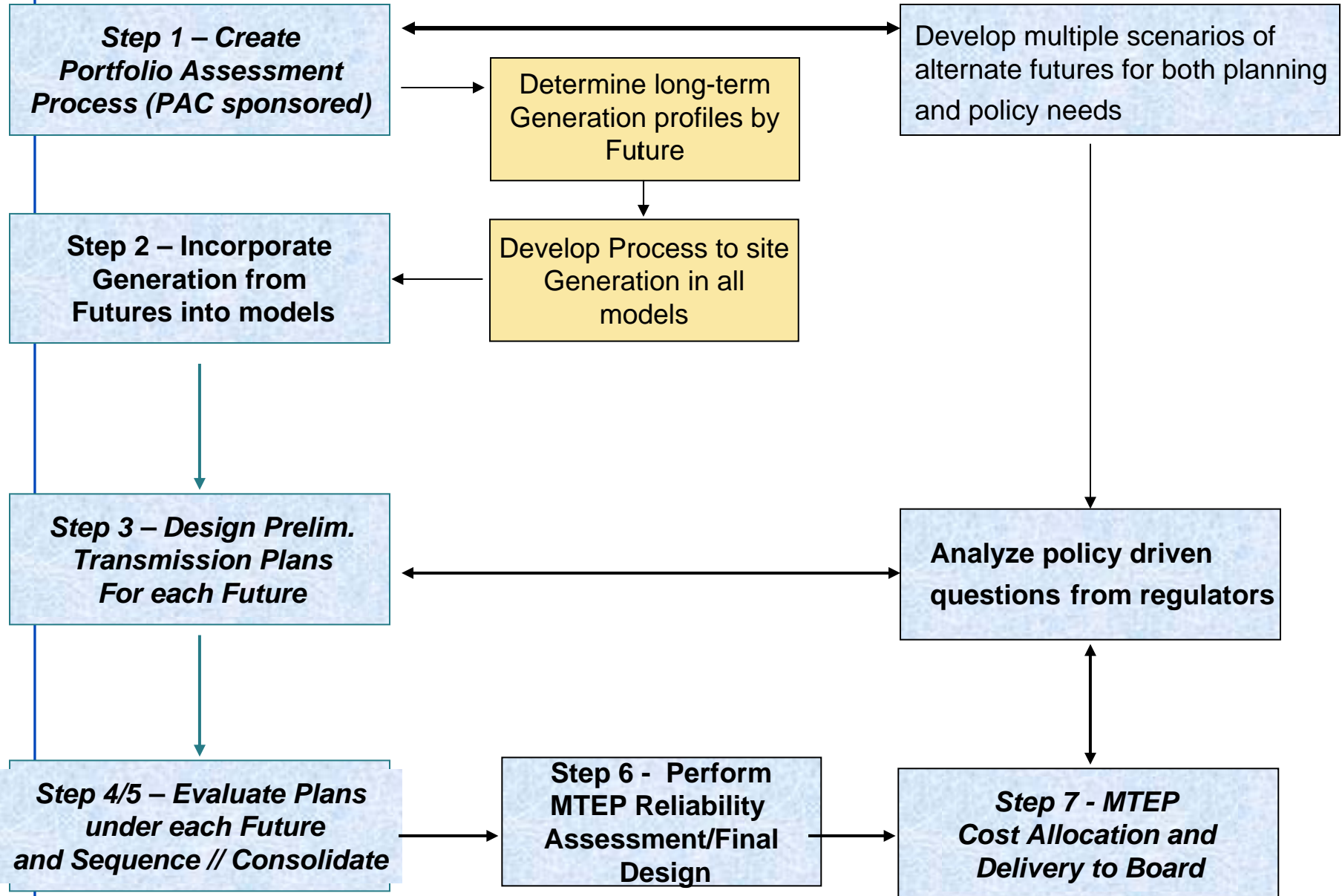
Joint Coordinated System Plan

Presentation
to
SPP Board of Directors
by
John Lawhorn

Joint Planning Initiatives

- **Joint Coordinated System Plan (JCSP)**
 - **Midwest ISO**
 - **SPP**
 - **PJM**
 - **TVA**
 - **Other Interested parties**
- **Performed in Coordination with DOE Eastern Wind Integration Transmission Study**
 - **20% wind requirement; and**
 - **30% wind requirement**
- **Using Process developed by the Midwest ISO for MTEP08**

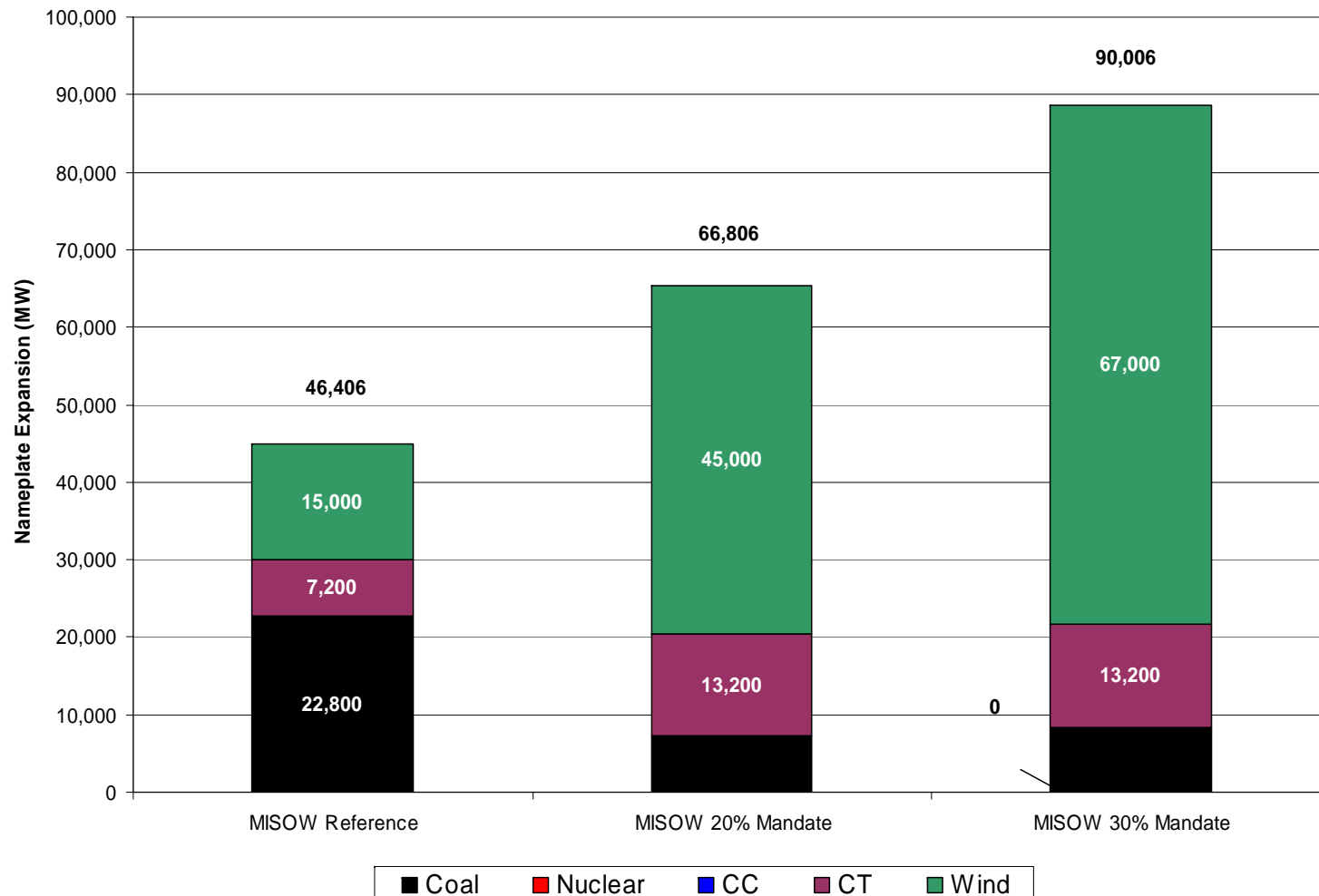
MTEP08 Process Flow



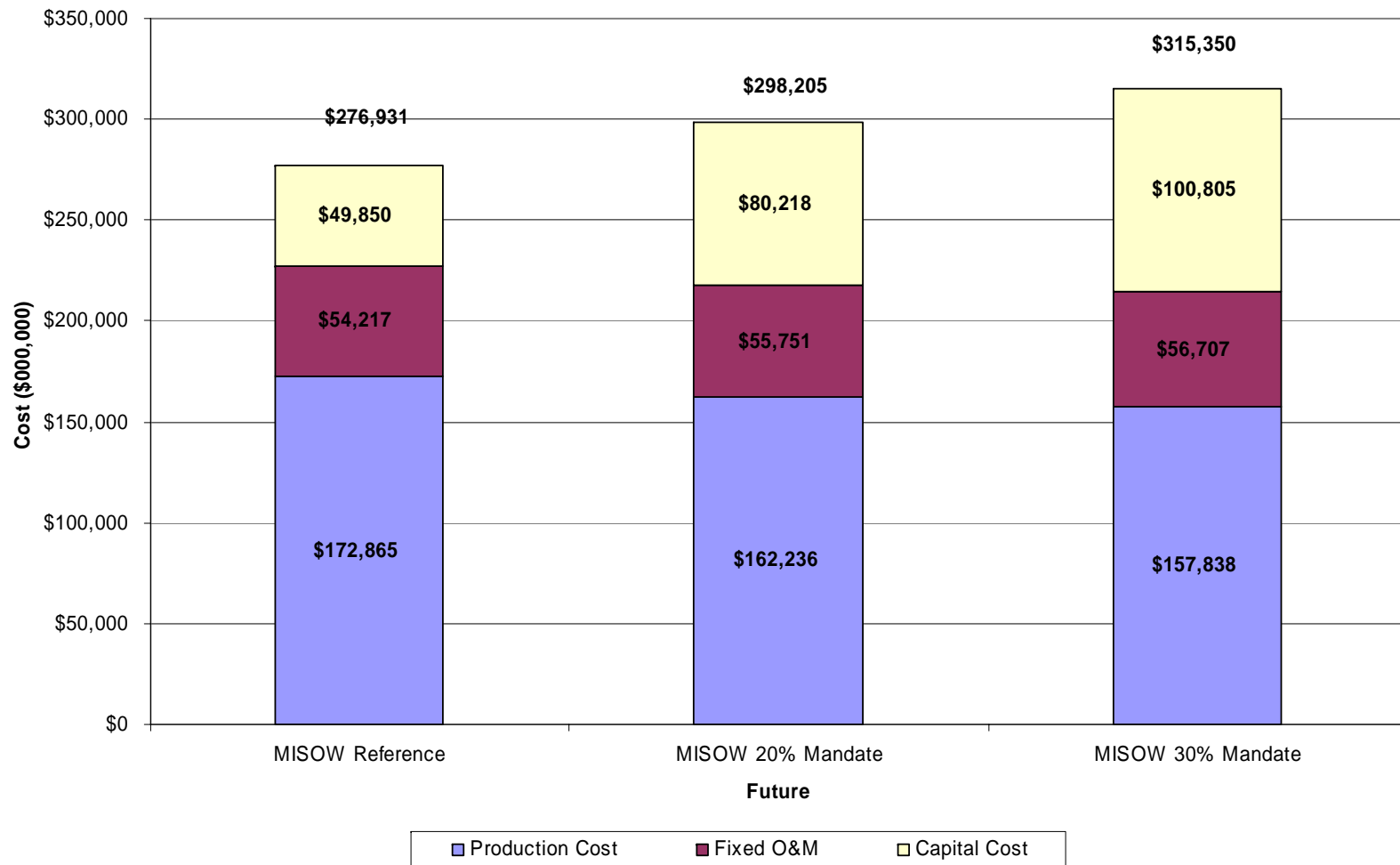
Expansion Results (JCSP) - All Regions

MISO Expansion

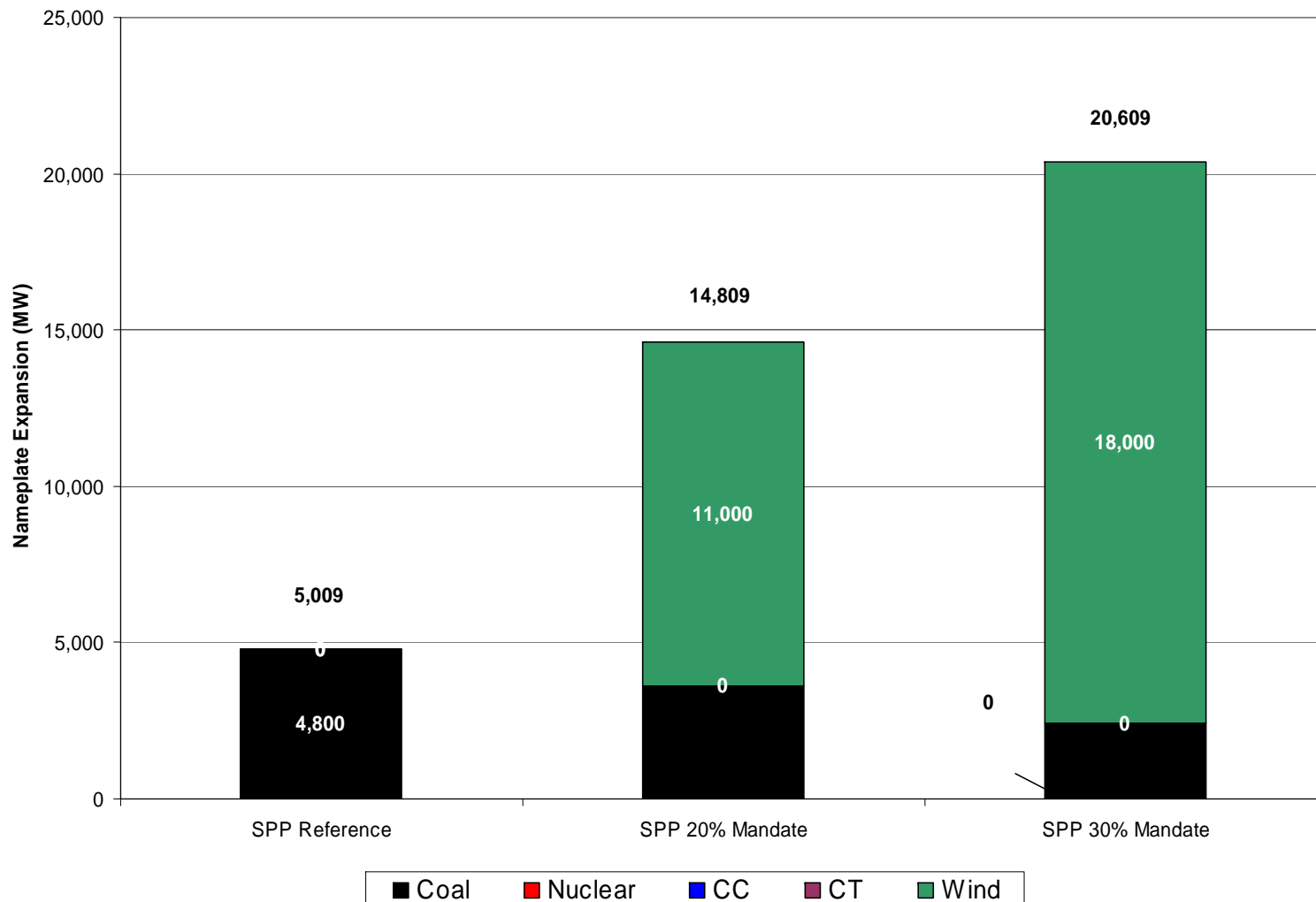
Generation Nameplate Expansion



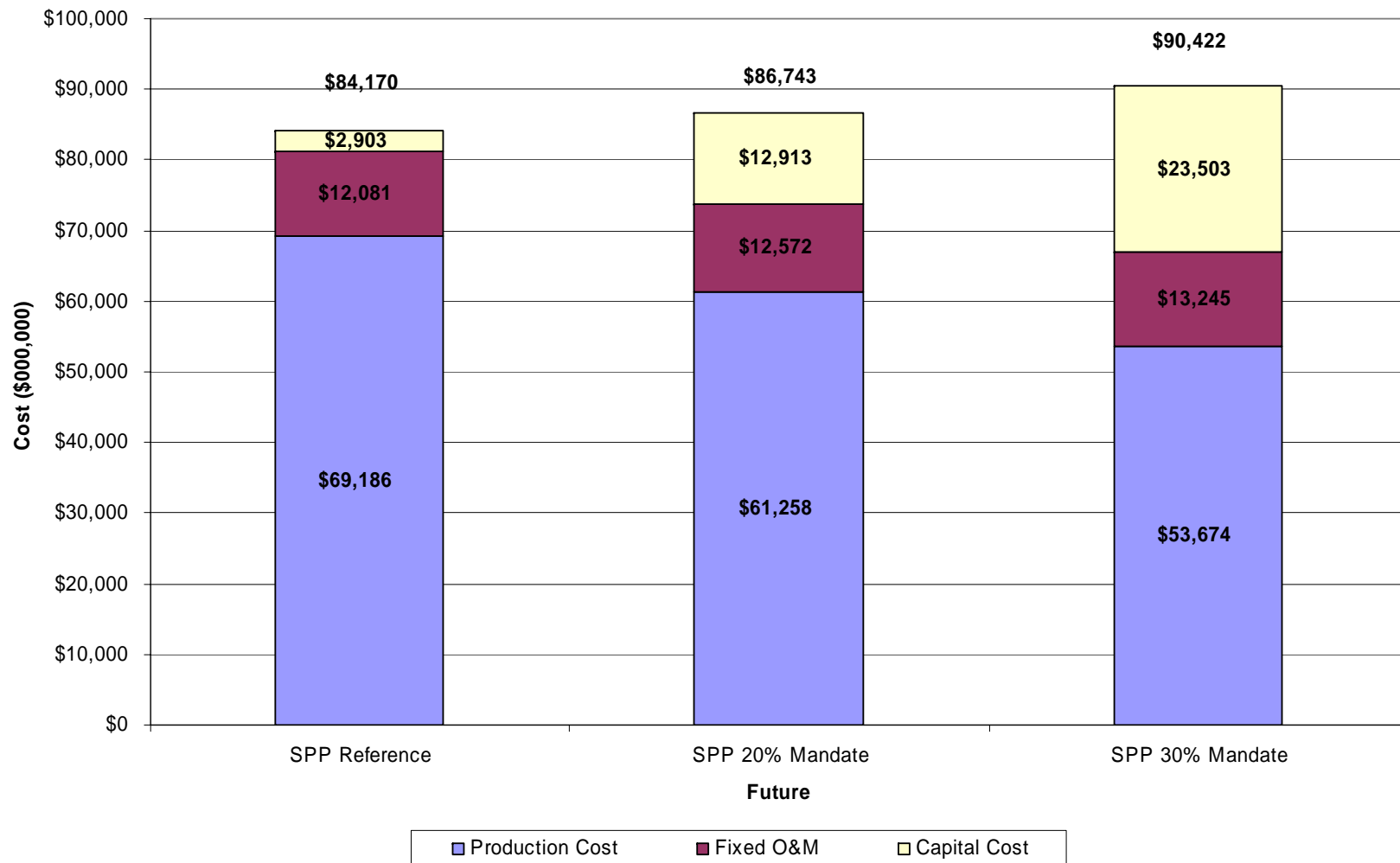
MISO Capital Costs (Million\$)



SPP Expansion w/out Entergy



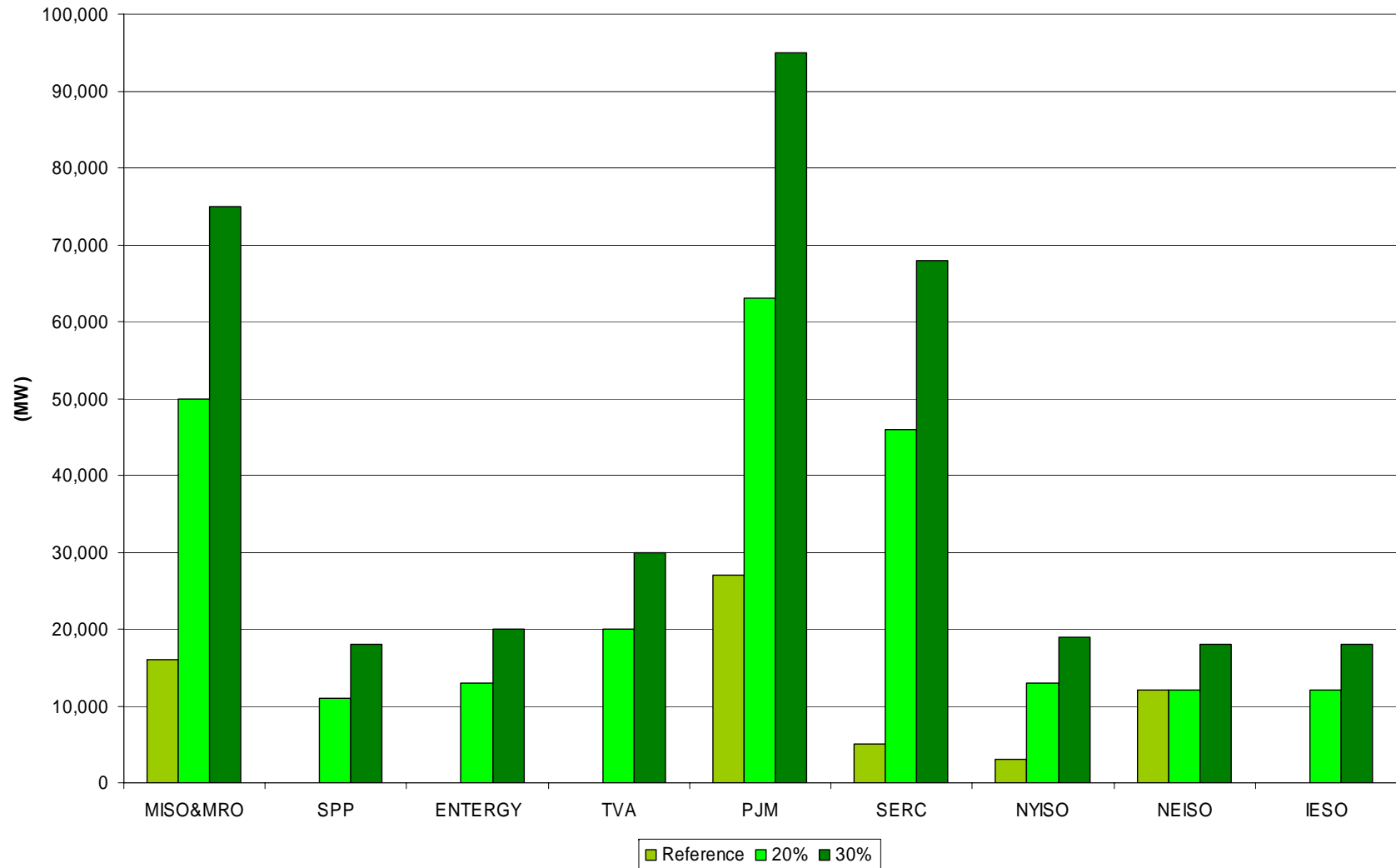
SPP w/o Entergy Costs (Million\$)



Statistics of Regional Expansions

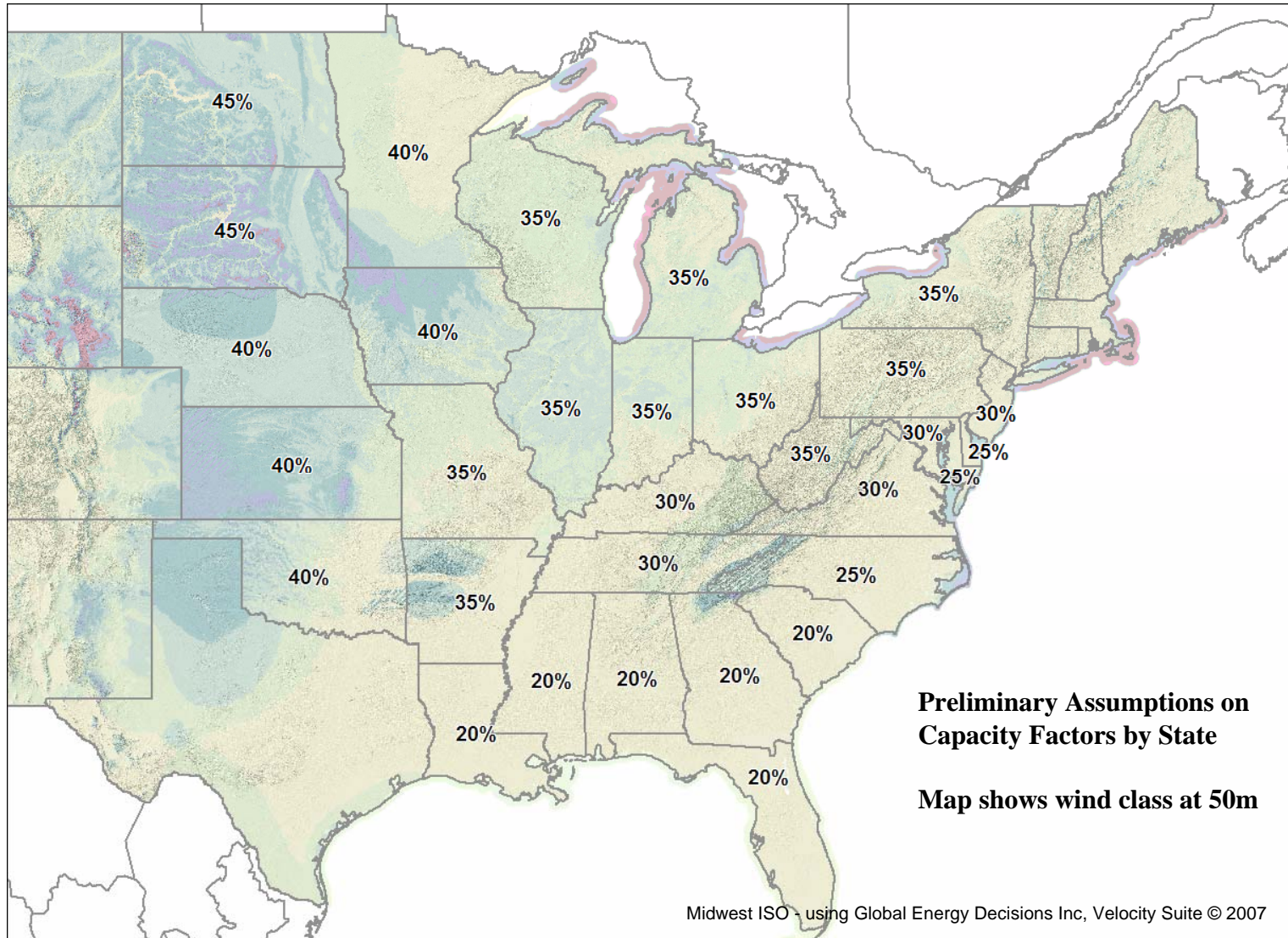
- Total MW needed to meet incremental load growth
 - 210,000 MW Reference
 - 360,000MW 20% Case
 - 450,000 MW 30% Case
- Total Cost of new generation to meet incremental load growth
 - \$1.3 Trillion Reference
 - \$1.4 Trillion 20% Case
 - \$1.5 Trillion 30% Case
- Estimated Cost of Transmission
 - \$100 Billion based on 7% of resource costs. JCSP study will define transmission

Wind Requirement By Region



Initial Wind Requirements

	Reference	20%	30%
MISO&MRO	16,000	50,000	75,000
SPP	0	11,000	18,000
ENTERGY	0	13,000	20,000
TVA	0	20,000	30,000
PJM	27,000	63,000	95,000
SERC	5,000	46,000	68,000
NYISO	3,000	13,000	19,000
NEISO	12,000	12,000	18,000
IESO	0	12,000	18,000
TOTAL	63,000	240,000	361,000



Redistribution of Wind – Based On Wind Quality/Availability

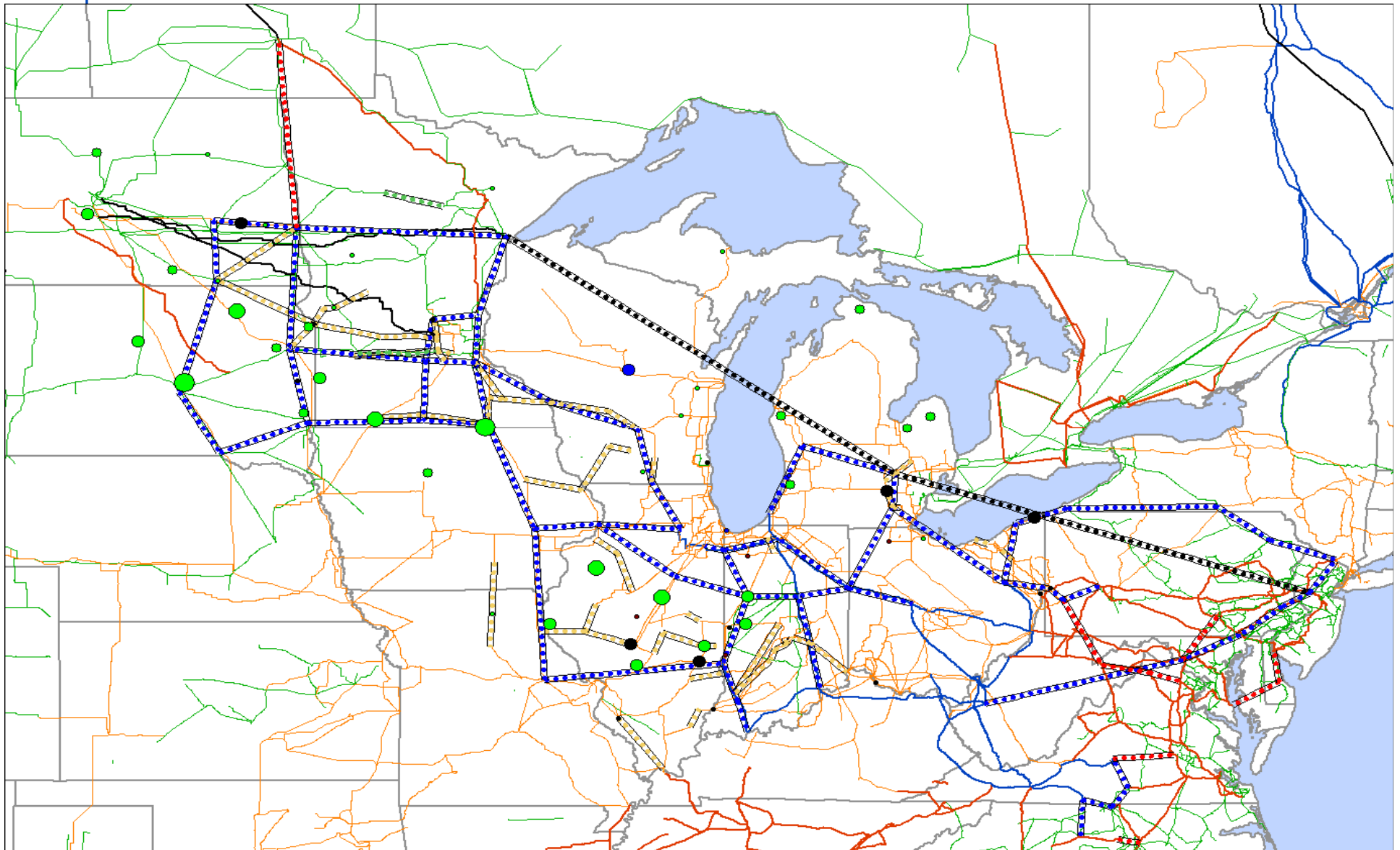
	Reference (MW)	20% (MW)	30% (MW)
MISO&MRO	16,000	70,000	144,000
SPP	0	65,000	100,000
ENTERGY	0	0	0
TVA	0	2,000	2,000
PJM	27,000	63,000	63,000
SERC	5,000	3,000	3,000
NYISO	3,000	13,000	13,000
NEISO	12,000	12,000	12,000
IESO	0	12,000	24,000
TOTAL	63,000	240,000	361,000

Transmission Requirements

Interface Flow Requirement (MW)	Transmission Type (kV) and Quantity to Meet Interface Flow Requirement						
	<u>138</u>	<u>230</u>	<u>345</u>	<u>500</u>	<u>765</u>	<u>765x2</u>	<u>765_{hsl}</u>
100	3	1	1	1	1	1	1
250	6	3	1	1	1	1	1
500	11	5	2	1	1	1	1
750	17	7	2	1	1	1	1
1,000	23	9	3	2	1	1	1
1,250	29	11	4	2	1	1	1
1,500	34	13	4	2	1	1	1
1,750	40	15	5	2	1	1	1
2,000	45	17	6	3	1	1	1
3,000	68	24	8	4	2	2	2
4,000	90	33	11	5	2	2	2
5,000	-	41	13	6	3	2	2
6,000	-	49	16	7	3	3	3
10,000	-	80	26	11	5	4	4

MTEP08
October 5, 2007
Overlay for
Step 4 Analysis

Overlay – Renewable Future



Timeframe: 2008 JCSP Steps 1 & 2

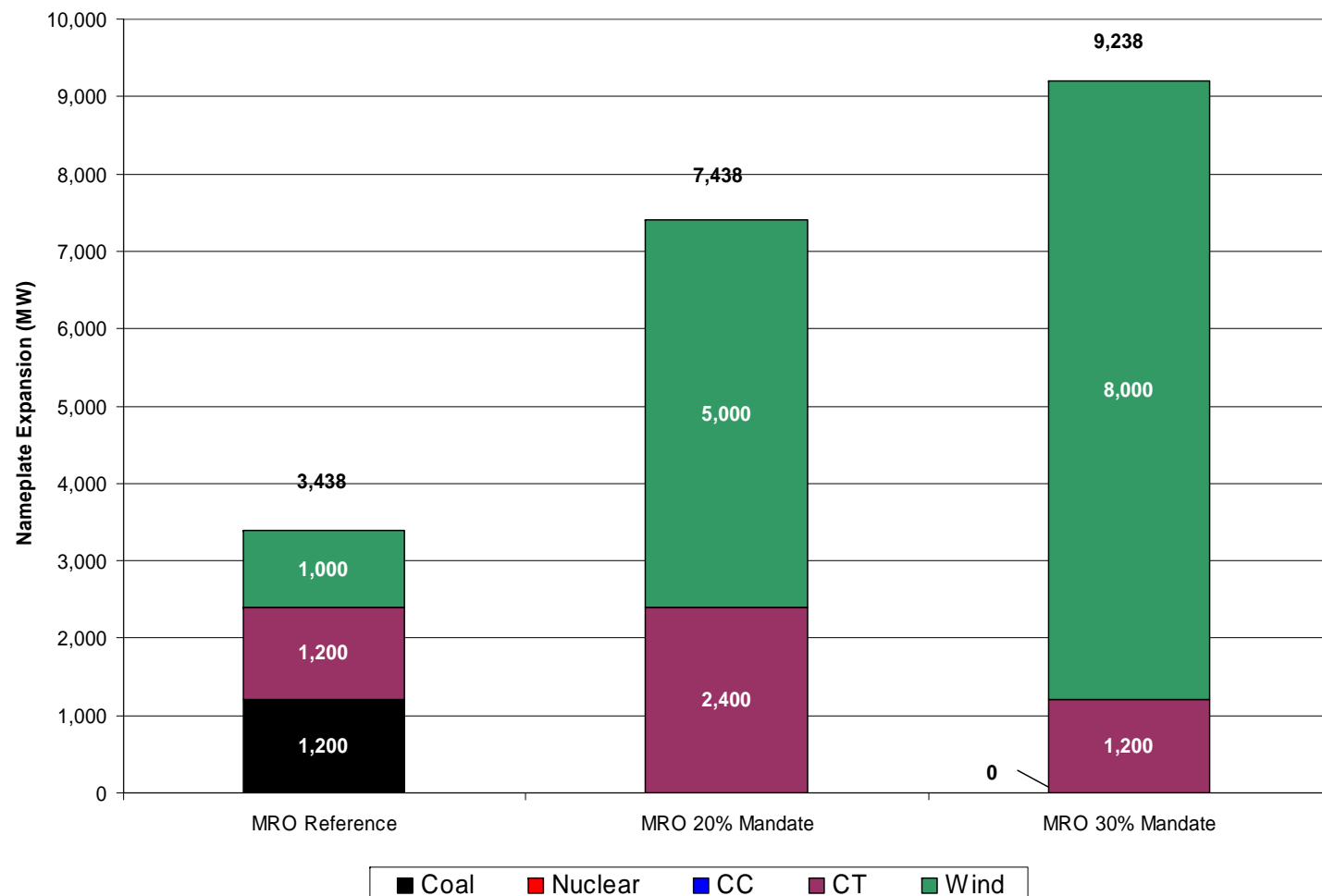
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Initial Model Development	█	█	█	█	█													
JCSP Workshops						█				█								
Update Data						█	█	█	█	█	█							
Runs + Analysis										█	█							
Initial Siting													█					
Stakholder Review														█				
Final Siting														█				
Populate Models															█	█	█	█
Communication	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█



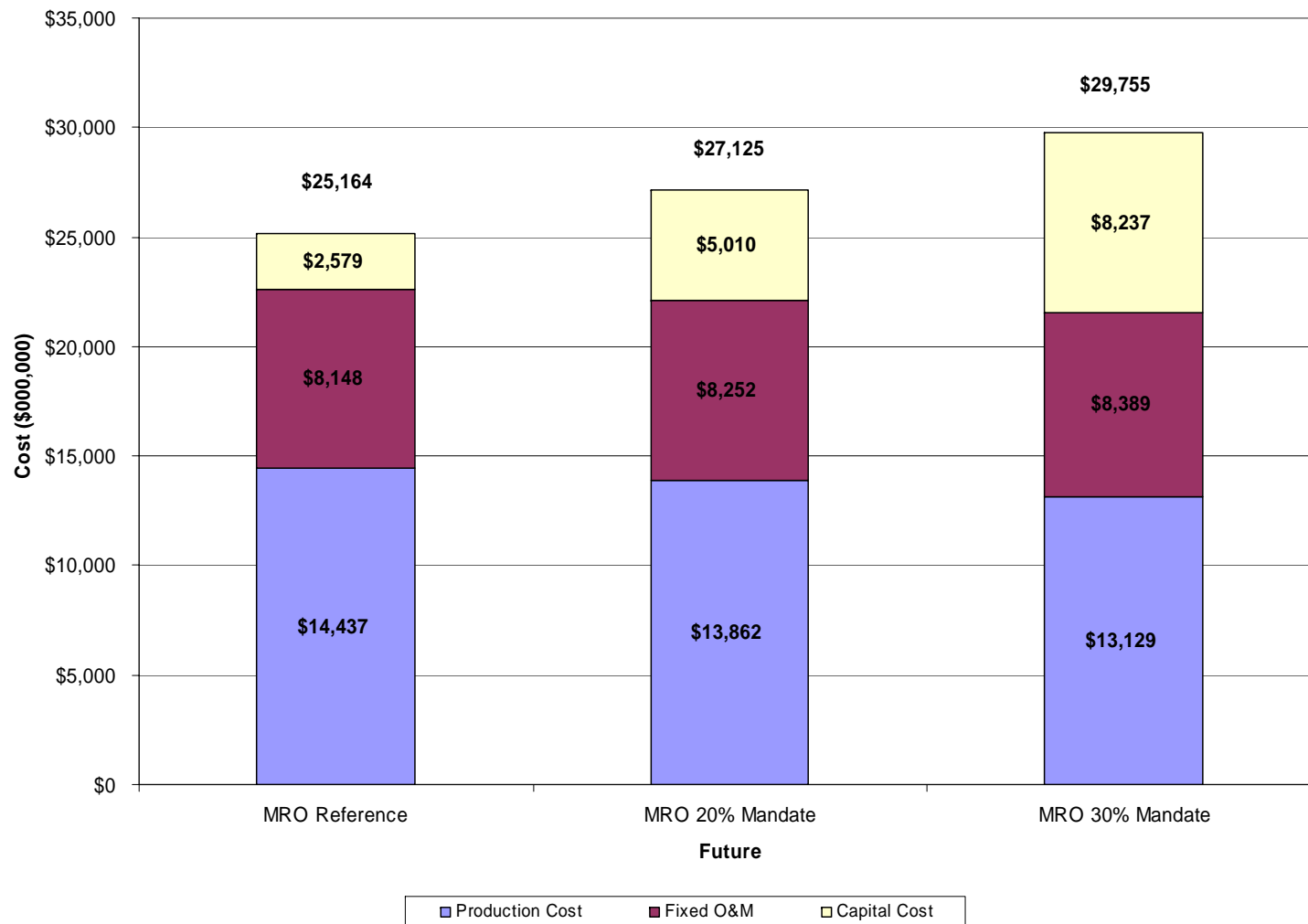
Appendix – Regional Expansions

MRO Expansion

Generation Nameplate Expansion

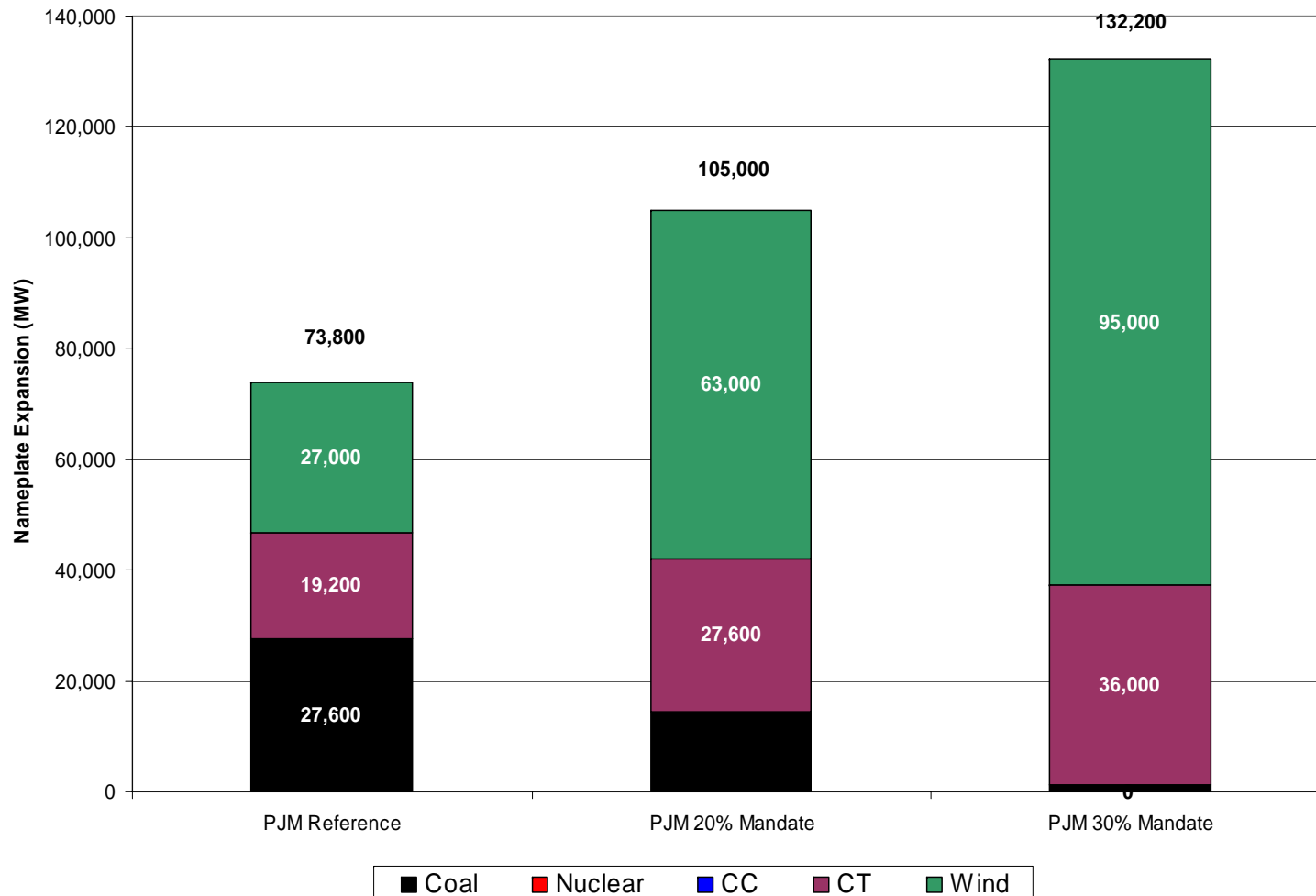


MRO Capital Costs (Million\$)

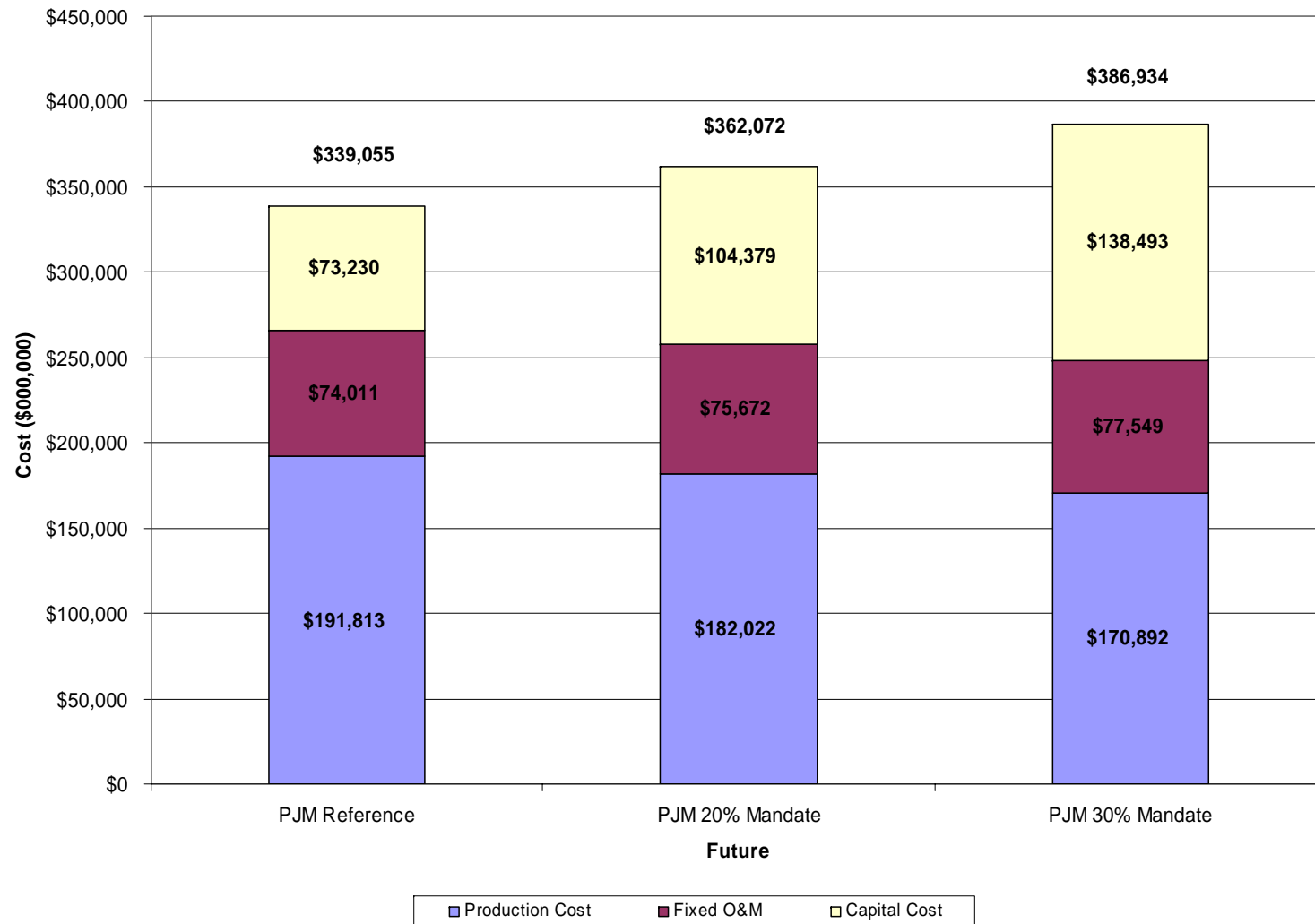


PJM Expansion

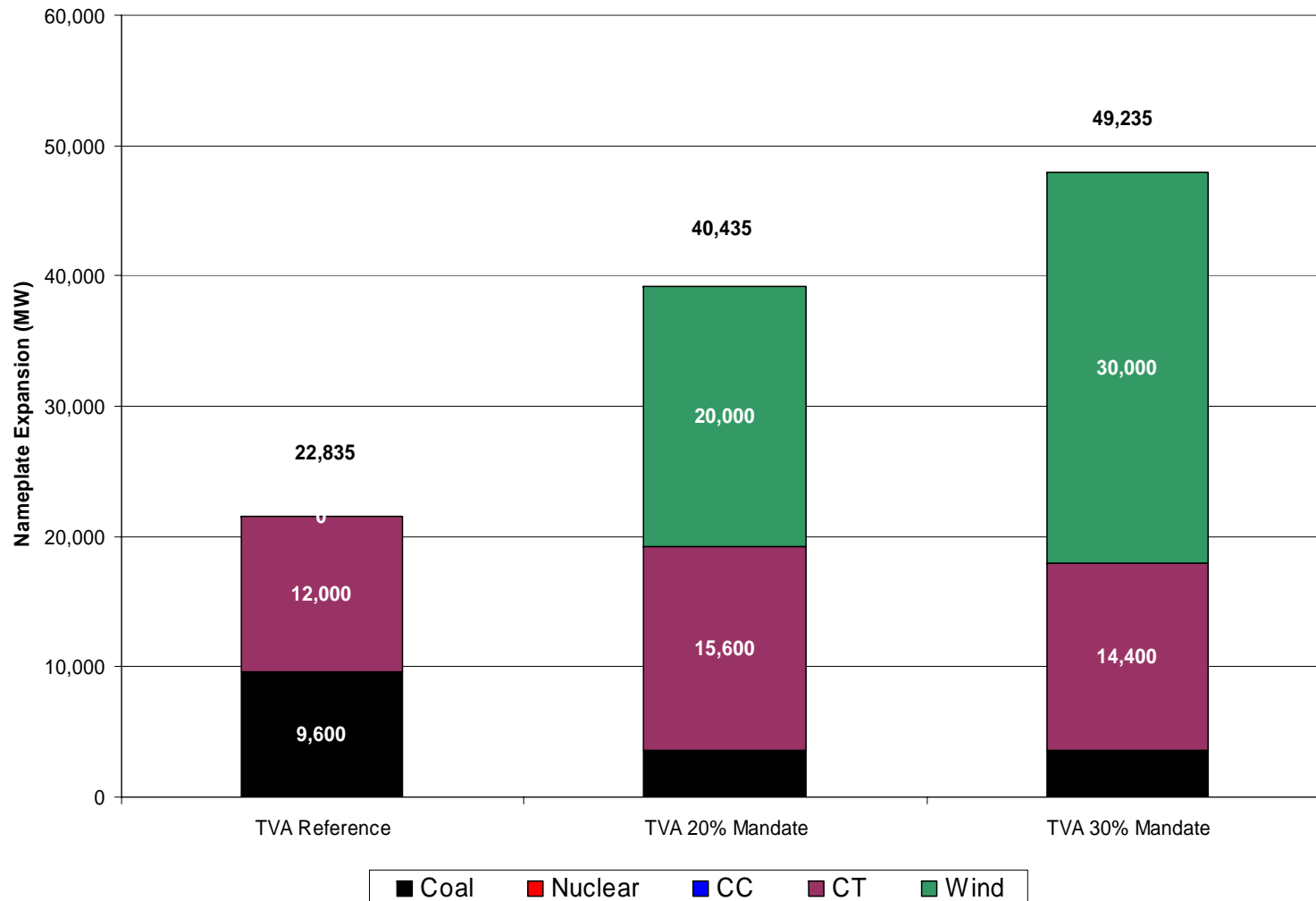
Generation Nameplate Expansion



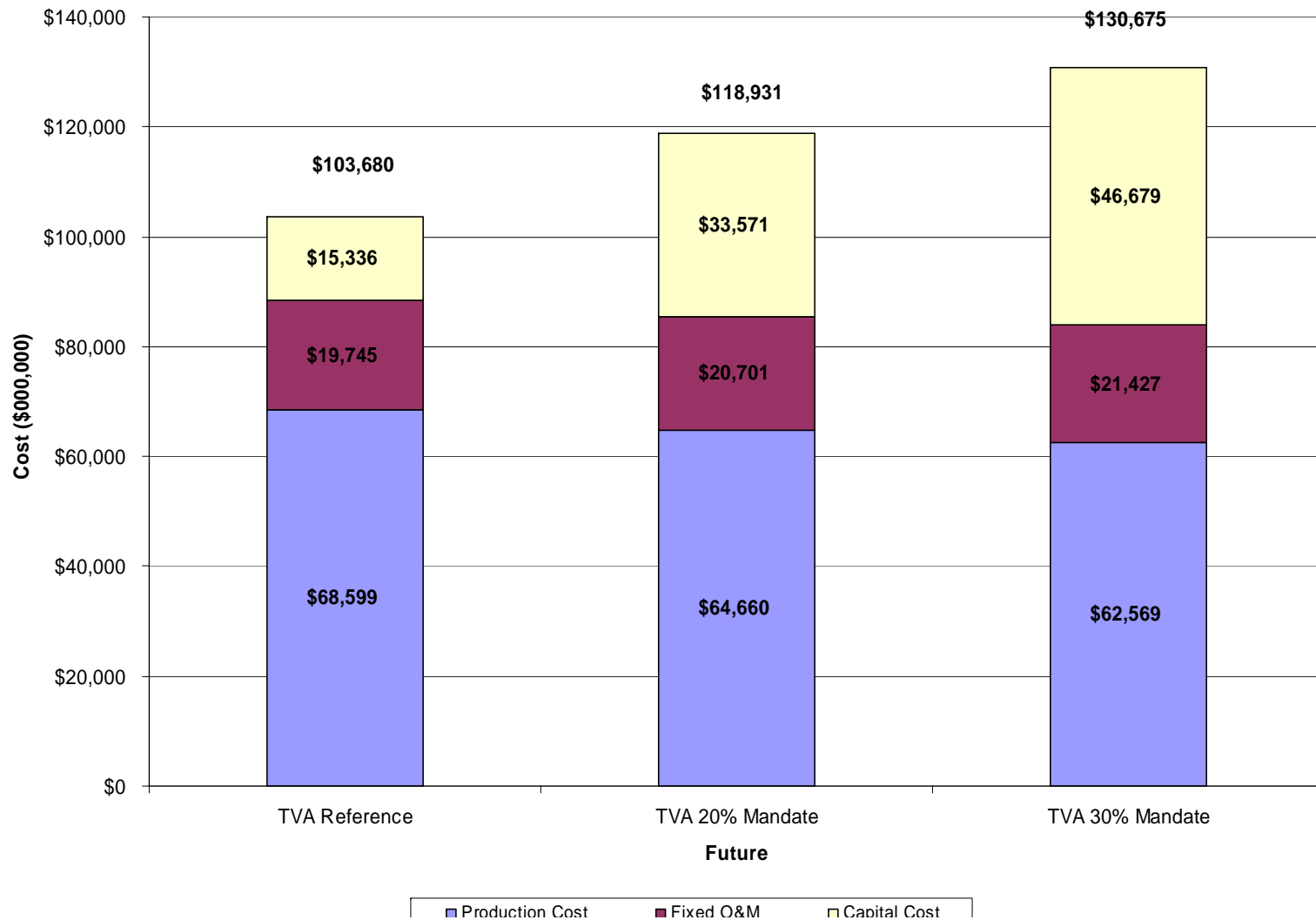
PJM Total Costs (Million\$)



TVA Expansion

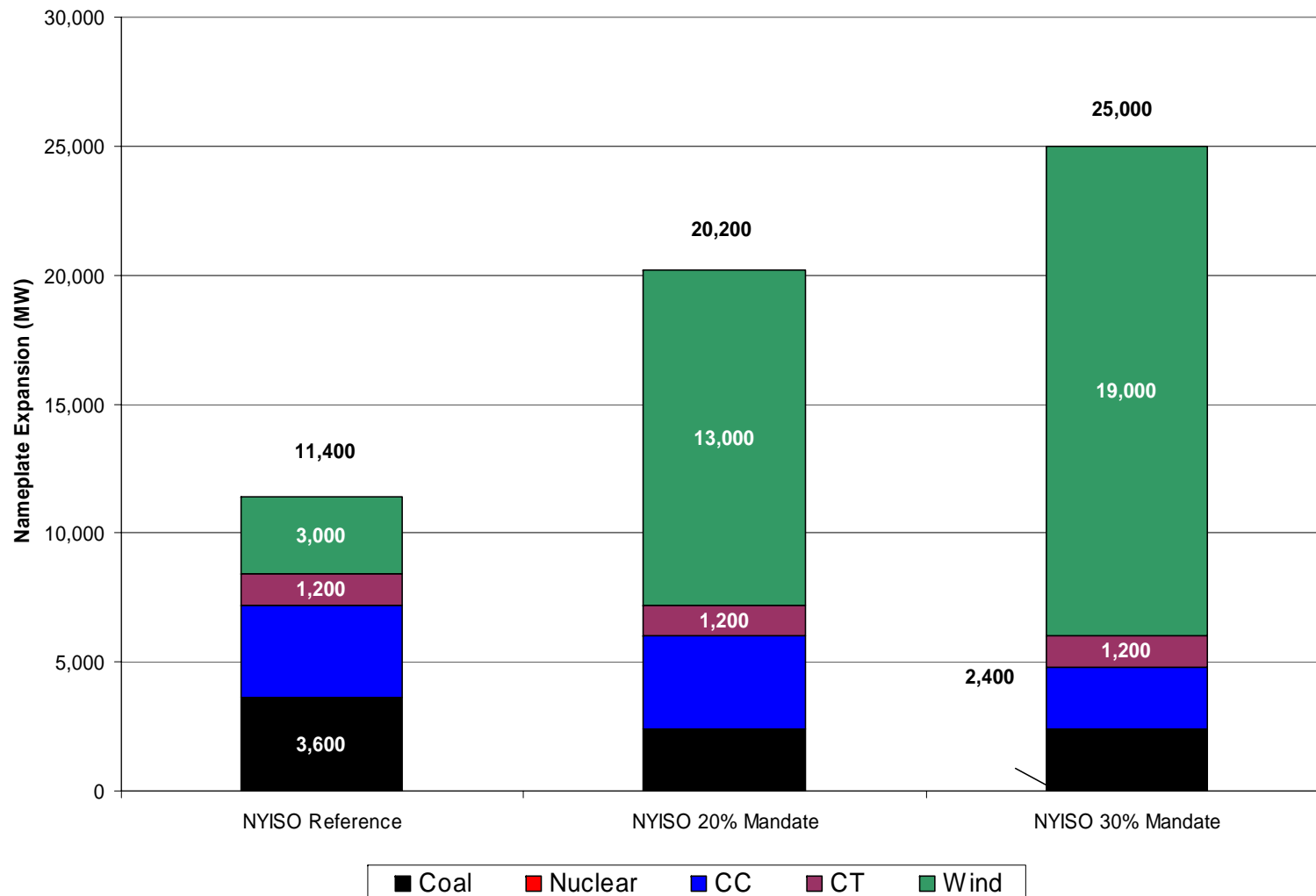


TVA Capital Costs (Million\$)

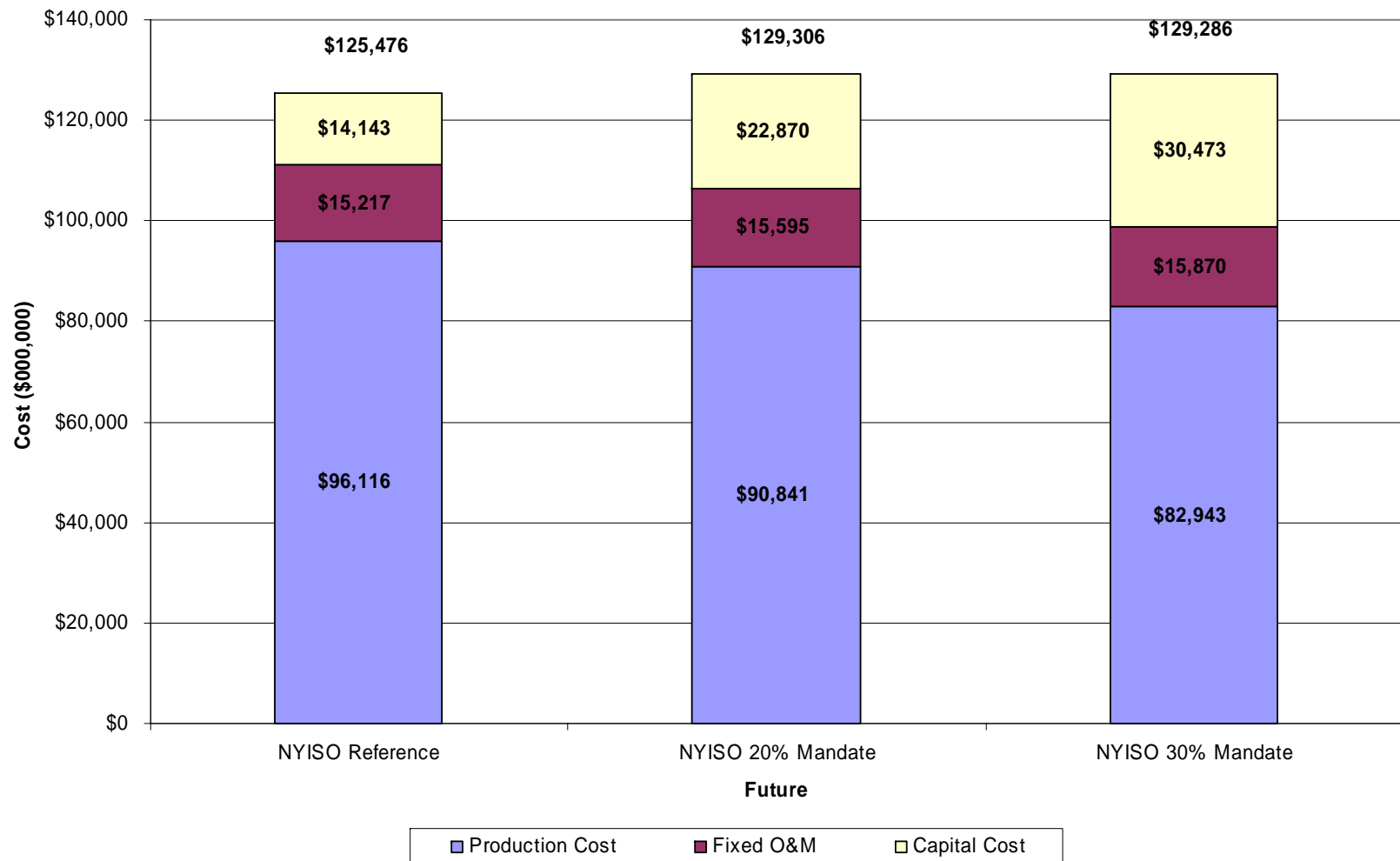


NYISO Expansion

Generation Nameplate Expansion

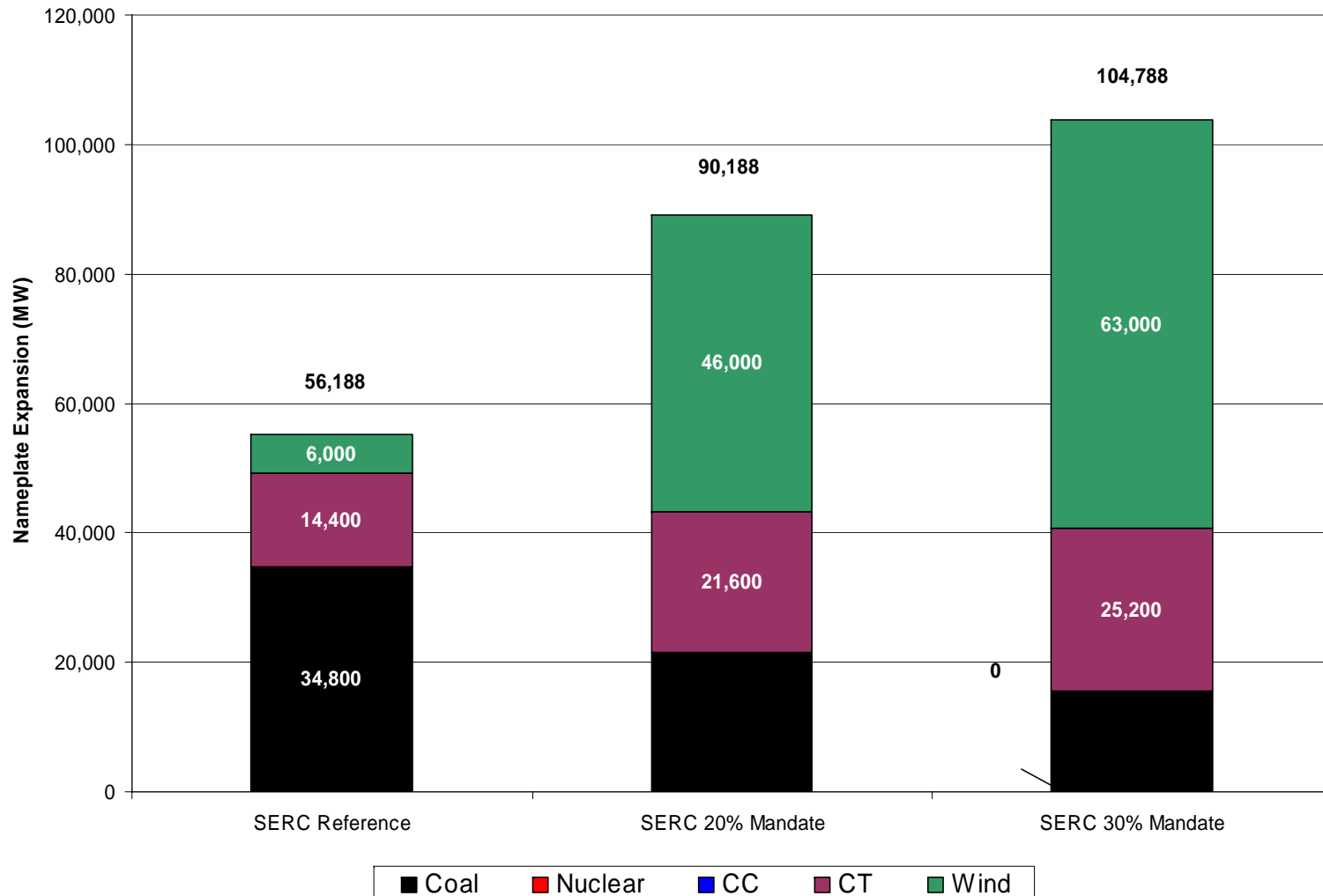


NYISO Capital Costs (Million\$)

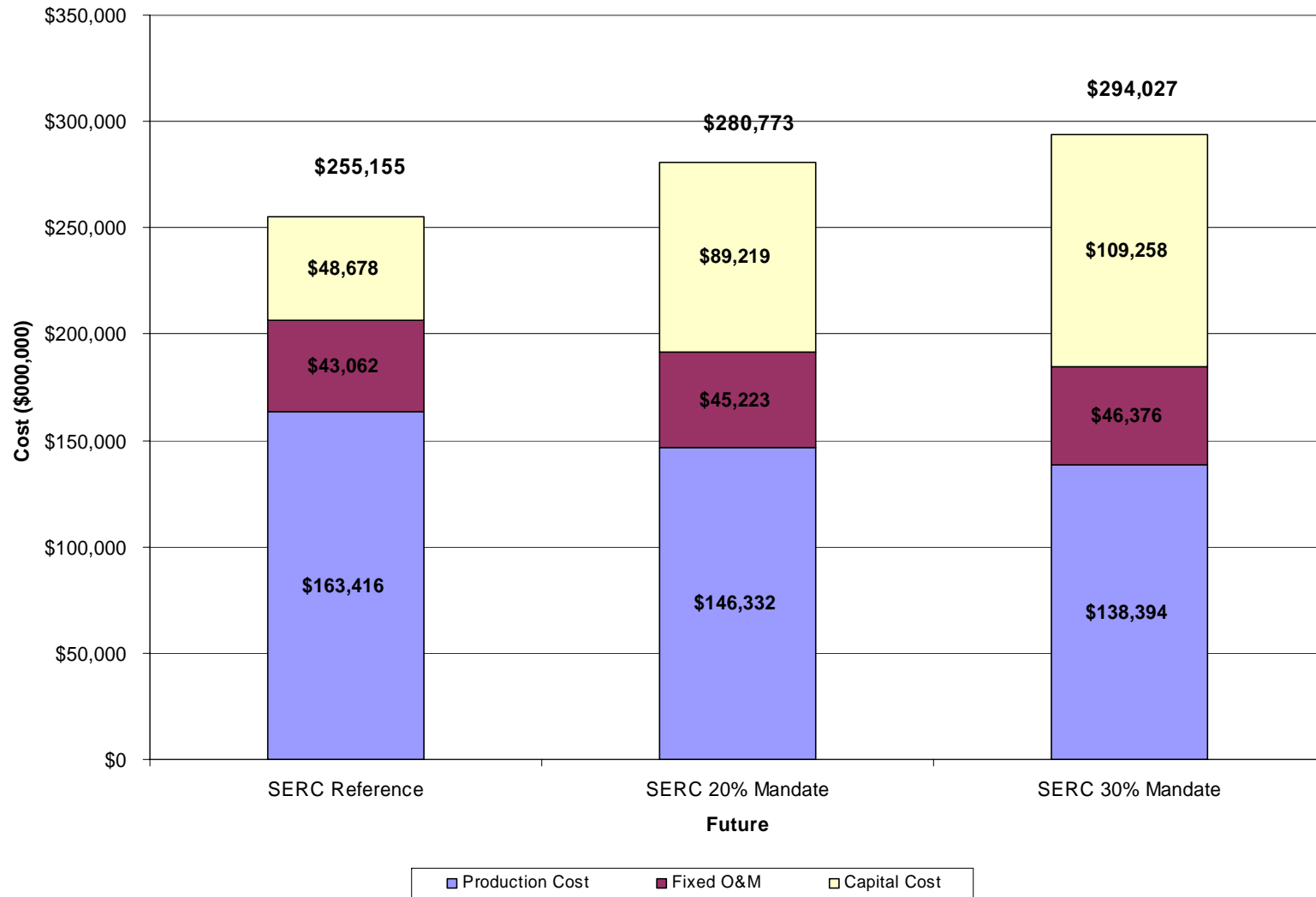


SERC Expansion

Generation Nameplate Expansion

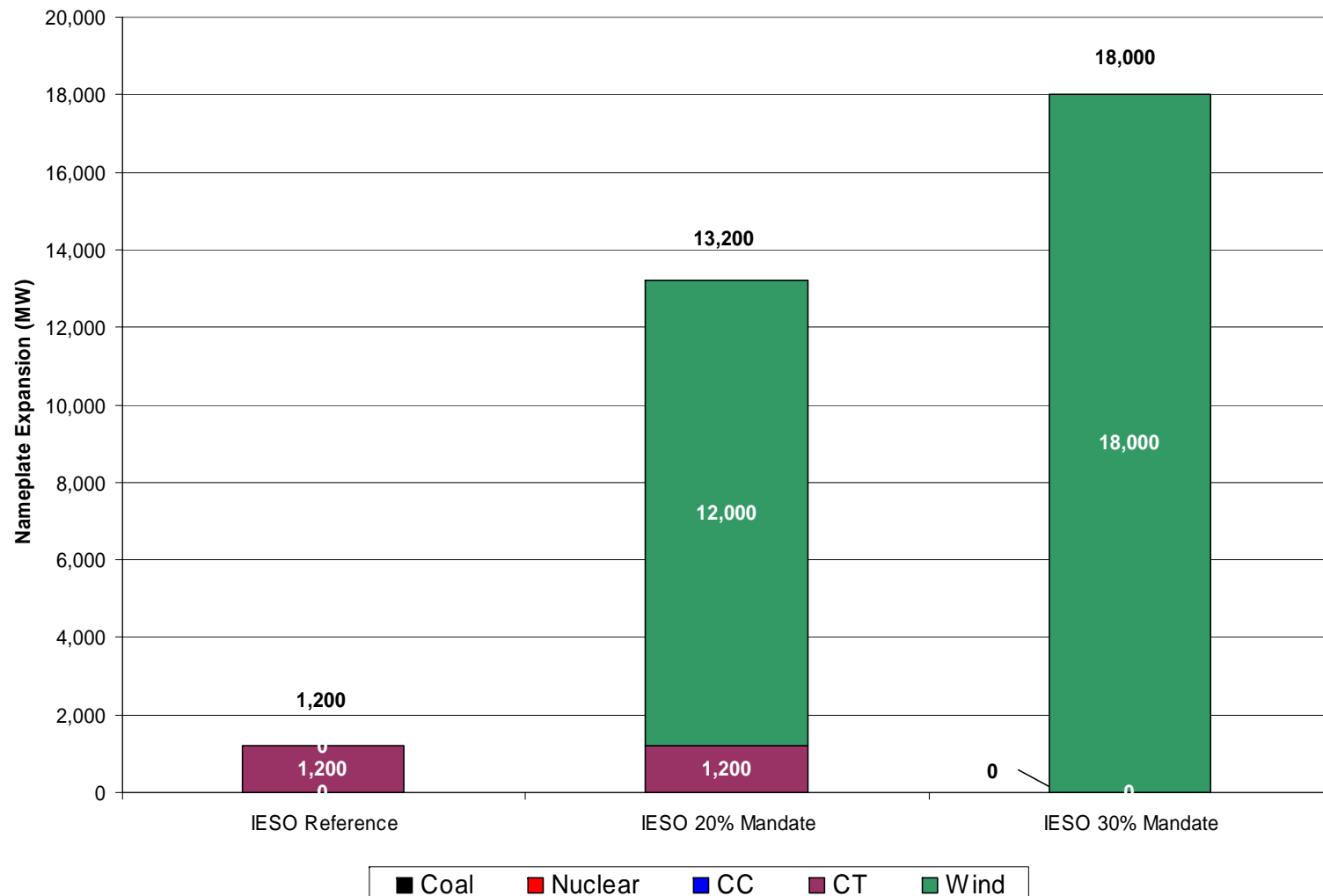


SERC Capital Costs (Million\$)



IESO Expansion

Generation Nameplate Expansion



IESO Capital Costs (Million\$)

20 Year Expansion Period Present Value Accumulated Costs

