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March 1, 2016

MEMORANDUM

TO: Council members

FROM: Ben Kujala

SUBJECT: BPA Transmission Planning and Asset Management

BACKGROUND:

Presenter: Jeff Cook

Summary Jeff Cook, the Vice President of Transmission Planning and Asset Management will discuss Bonneville's transmission planning and discuss transmission elements of the Focus 2028 efforts at Bonneville.

Relevance The Council coordinates with transmission planning to avoid conflicts with regional resource strategies. Bonneville provides a significant portion of the regions bulk electric transmission.

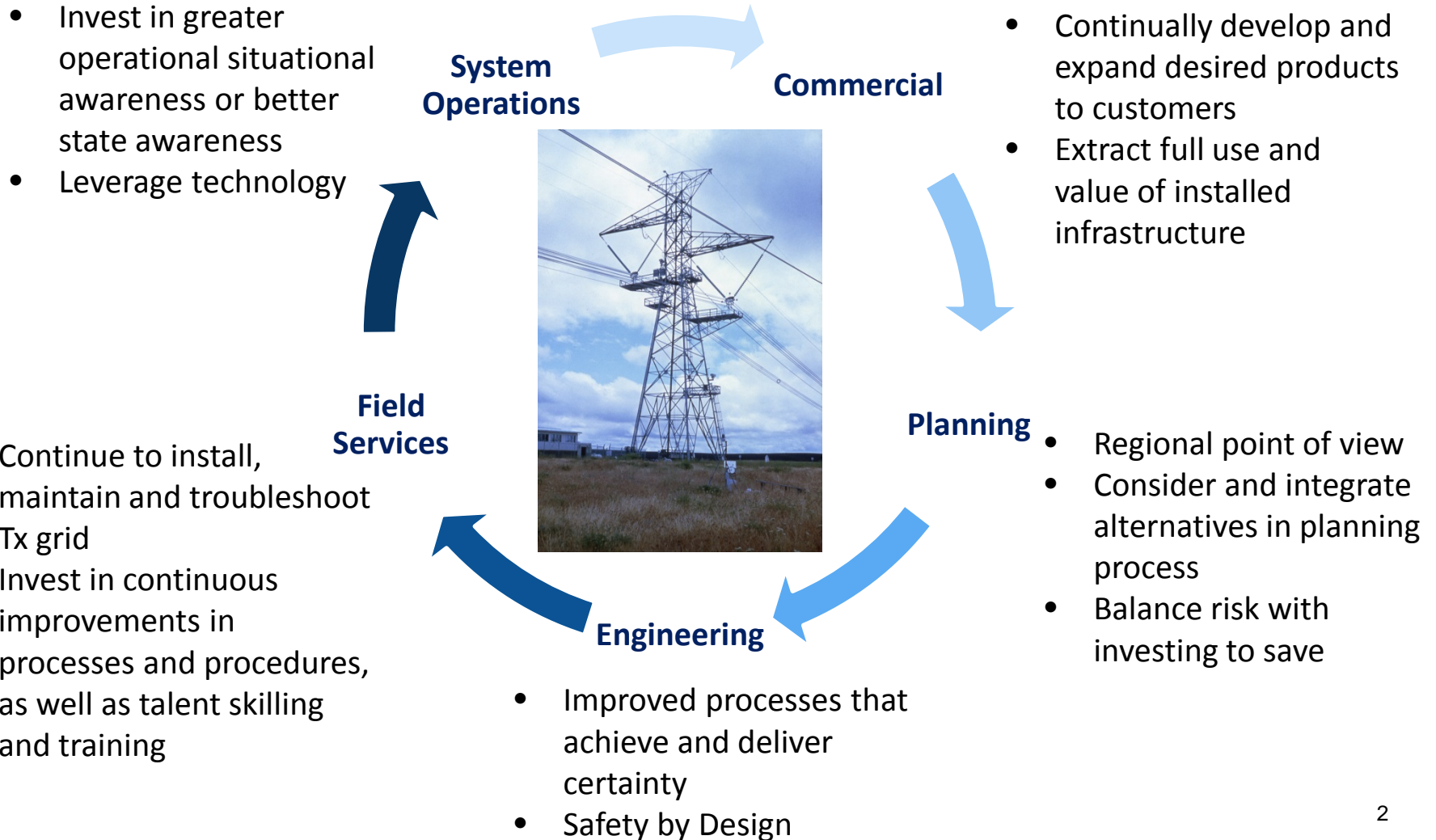
Workplan: 1.B. Develop Seventh Power Plan and maintain analytical capability

Background: Cook joined BPA in March of 2004 as an electrical engineer for its control and communication systems. He later managed the Customer Service Engineering group and Transmission's Communication and Grid Modeling group. Last spring, Cook became the acting vice president of Engineering and Technical Services and then moved to the acting vice president of Planning and Asset Management, the position he assumed as a permanent role late last year.

Transmission Services

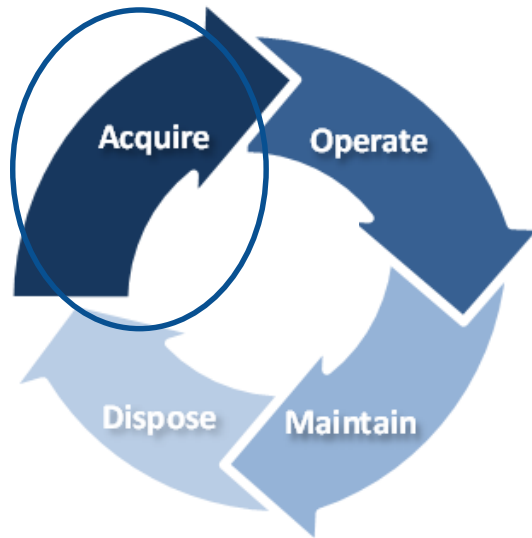
PLANNING AND ASSET MANAGEMENT

Transmission Lifecycle



Transmission Improvement Efforts

“Asset Management and Program Delivery” Initiative



Focusing on improving capabilities in the Acquire phase of the asset lifecycle and on Transmission asset information

Revised Asset Acquisition Lifecycle



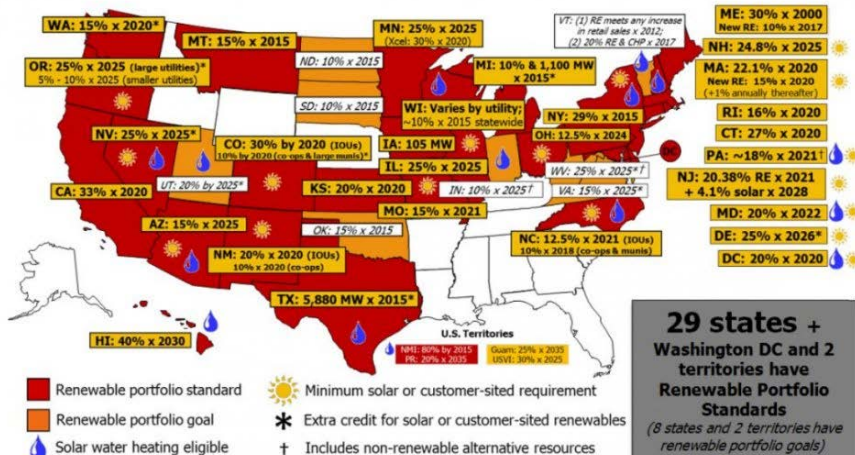
Supported by improved asset data and information quality

A Changing Industry

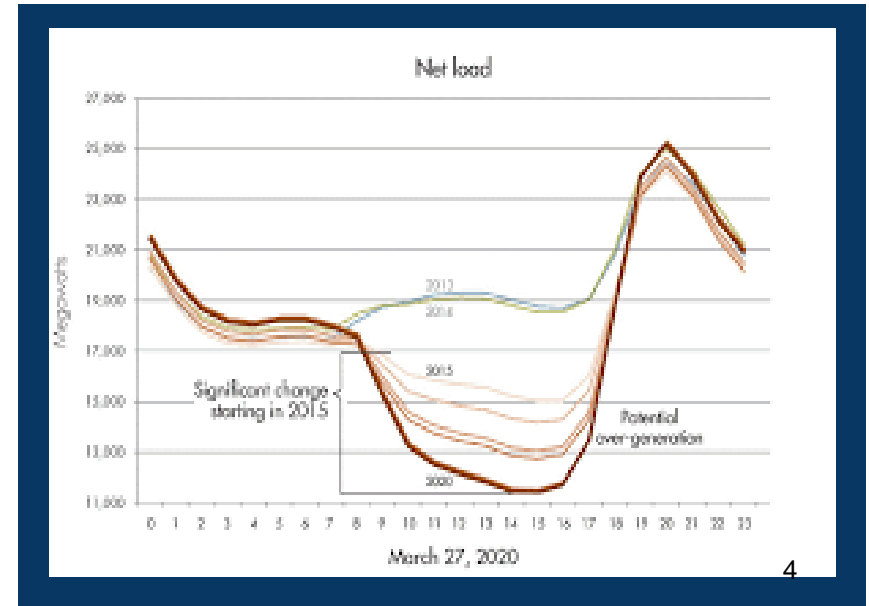
- Key business drivers
 - Forecasted Demand
 - Impacts of Energy Markets
 - Generation Choices
 - National, Regional, and Local Policies



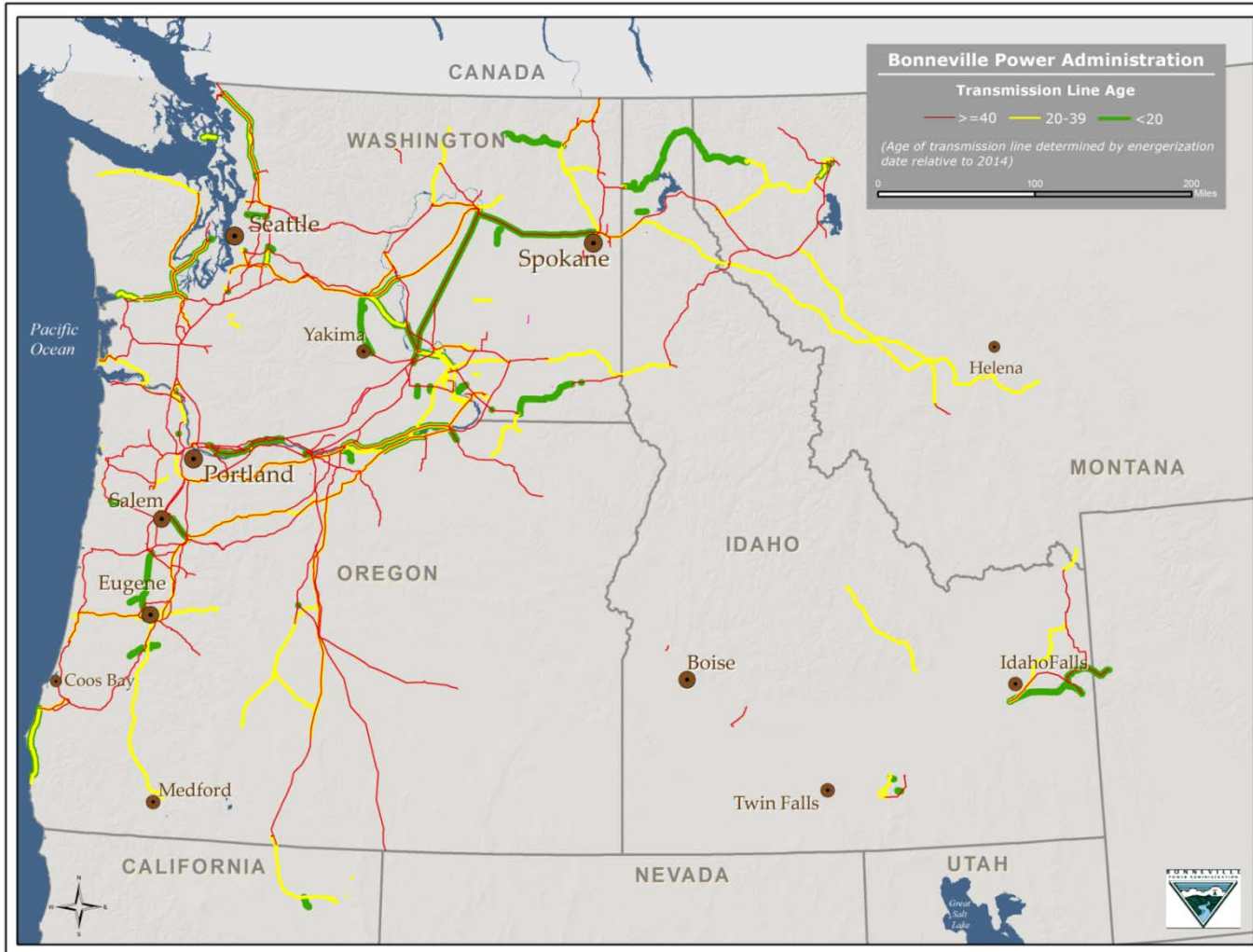
Exhibit 20
State Renewable Portfolio Standards



Source: Database of State Incentives for Renewables and Efficiency (DSIRE) RPS Policies summary map, March 2013

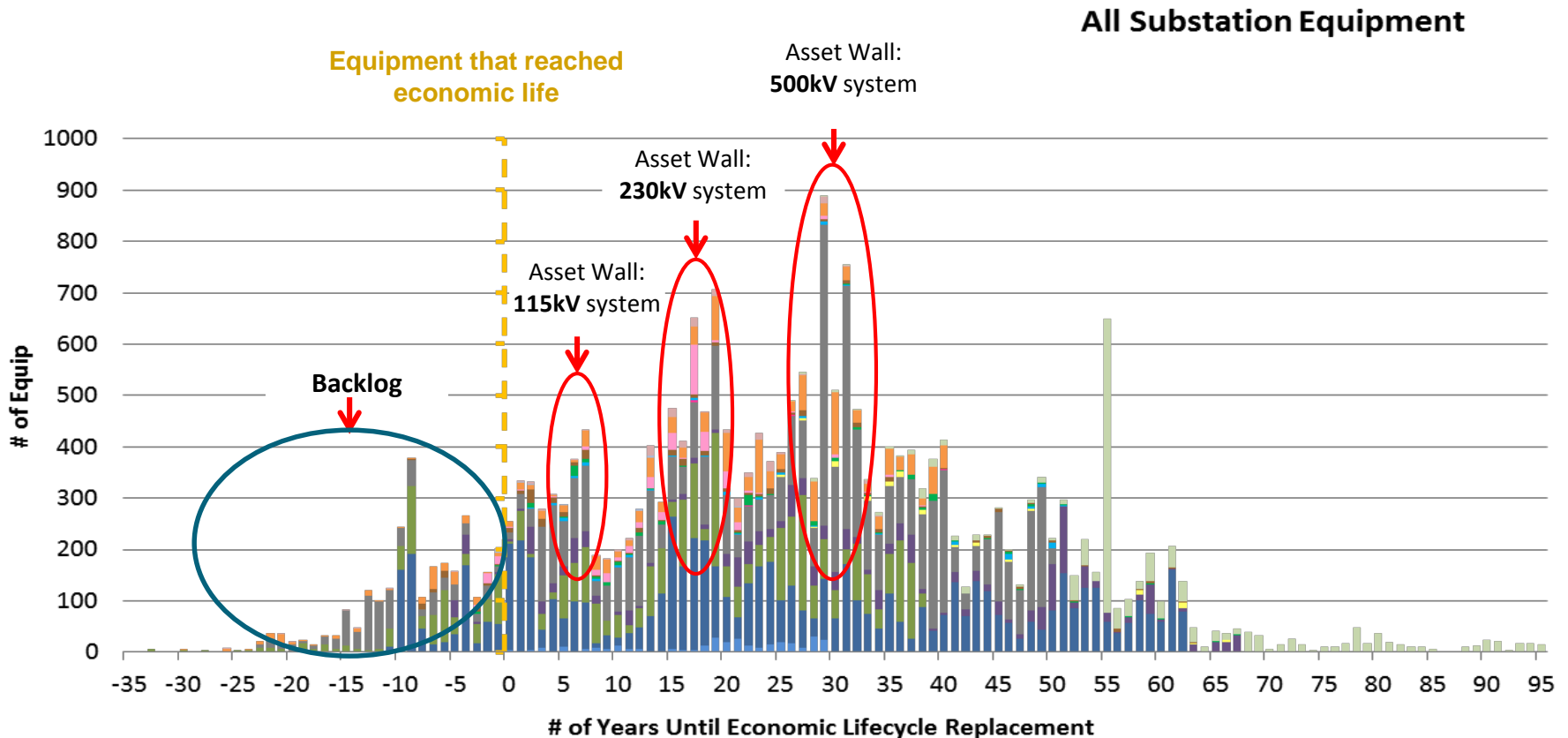


Our Infrastructure is Aging



Greater than 50% of the facilities were constructed prior to 1962.

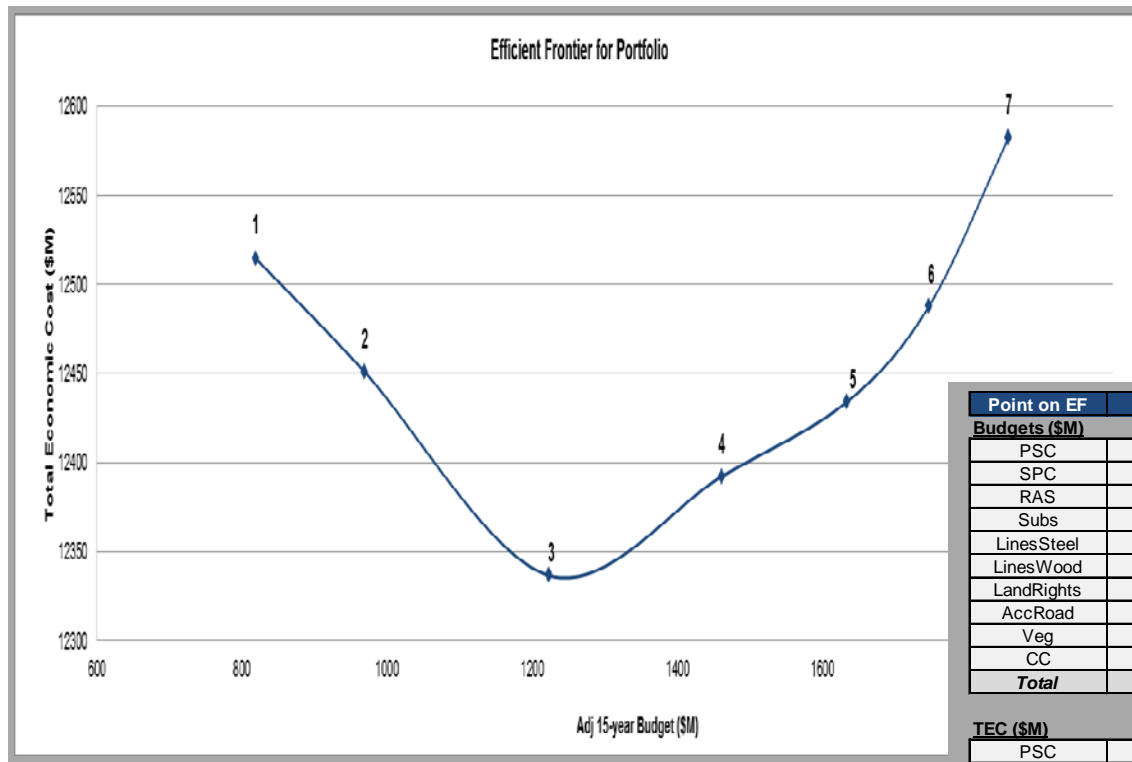
Situation: Hitting the Asset Walls



Substation AC is one of the largest transmission programs at BPA with some of the most critical equipment on the system. It currently has a **\$700M+** backlog.

Improvements in Sustain Program Planning:

Prioritizing Sustain Programs based on Total Economic Cost



Illustrative

Point on EF	1	2	3	4	5	6	7
Budgets (\$M)							
PSC	107	237	237	245	285	337	410
SPC	60	69	200	238	249	261	272
RAS	0	0	0	0	0	0	0
Subs	316	325	420	430	494	494	494
LinesSteel	49	49	49	83	90	93	97
LinesWood	218	219	243	304	332	365	378
LandRights	0	0	0	0	0	0	0
AccRoad	69	69	73	161	183	197	206
Veg	0	0	0	0	0	0	0
CC	0	0	0	0	0	0	0
Total	819	969	1223	1461	1633	1747	1856
TEC (\$M)							
PSC	1819	1760	1760	1760	1765	1788	1853
SPC	1136	1134	1065	1065	1067	1072	1082
RAS							
Subs	6259	6257	6211	6212	6224	6224	6224
LinesSteel	1317	1317	1317	1309	1309	1311	1314
LinesWood	1673	1672	1670	1668	1672	1686	1695
LandRights							
AccRoad	311	311	314	379	396	407	415
Veg							
CC							
Total	12515	12451	12337	12392	12434	12488	12582