



# Transmission Services Asset Management Strategy

Capital Investment Review Workshop  
April 20, 2012



# Transmission Asset Strategy

## Strategy Forecast

The 2012-2021 asset management strategy consists of a prioritized set of sustain and expand investments to meet transmission objectives and drivers.

Total capital - \$4.7 billion for the ten year timeframe

- Direct capital costs<sup>1</sup> equals \$3.9 billion
  - Sustain - \$1.8 billion (46% of direct)
  - Expand - \$1.8 billion (46% of direct)
  - Celilo upgrade project - \$324 million (8% of direct)
- Customer requested projects (PFIA) total \$328 million
- Capitalized indirects equals \$483 million

The forecast has been updated and reshaped to stay within the capital investment level presented during the 2011 Strategic Capital Discussions.



Central Ferry Substation



Insulator replacement

# Transmission Asset Strategy

## *Strategy Forecast (cont.)*

The following projects are **not** represented in the proposed 10 year forecast due to project uncertainty and budget limitations:

- Network Open Season 2012 (\$ to be determined)
- Boardman to Hemingway/MISTI (\$300-400 million)
- Boardman Substation – Morrow County data center load requests (\$30 million)
- Changes to Caribou Sub/Hooper Springs (\$29 million)
- Pending Central Ferry – Lower Monumental Decision (Currently in budget but the schedule could shift to out years)
- Regional imbalance market (\$ to be determined)



McNary-John Day Towers

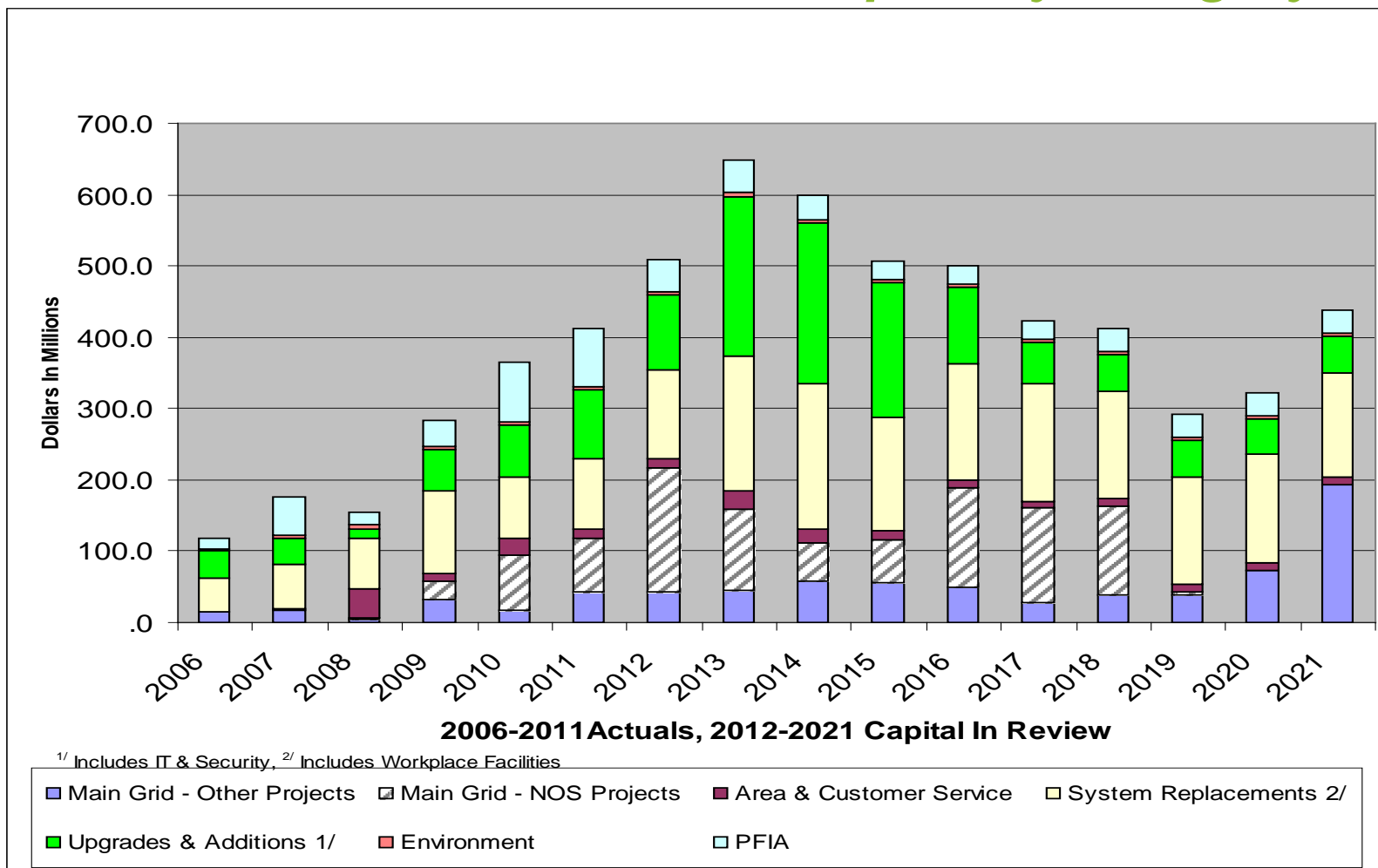
# Transmission Asset Strategy

## *Update on Celilo Upgrade Project*

- The Celilo Upgrade project (Pacific Direct Current Intertie), given its criticality, is now being treated separately from other forecasted spending estimates due to the large capital outlay required. If included in the base it would squeeze out many other necessary projects. It can be funded from non-Treasury sources and costs will be recovered only from parties benefiting from the California Oregon Intertie.
  - Estimated is \$324 million direct capital cost. This is an increase of \$216 million since the 2010 IPR
  - With AFUDC and overheads, the total capital cost is estimated to be \$428.1 million
- The project is in the planning and design stage and is expected to take 4 years to complete.
- Previous work in 2001 – 2004 includes replacement of mercury arc valves with solid-state thyristor valves in converters 3 and 4, to avoid derating intertie from 3100MW to 1100MW
- The replacement valves will be retired when the new converter is in service. Studies are being done to repurpose these valves for other uses on the system

# Transmission Asset Strategy

## CIR Initial Forecast Direct Capital by Category



This chart shows the overall capital program for the Transmission Business Unit including IT, Security, Non-electric Facilities, and Environment. This also includes the breakout of the Network Open Season (NOS) investments.

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## CIR Initial Forecast

The initial CIR forecast delays the I-5 and Northern Intertie projects, calling upon alternatives to meet load service obligations and providing a reliable transmission system during the delay period

**Capital Costs** (In Millions, Nominal)

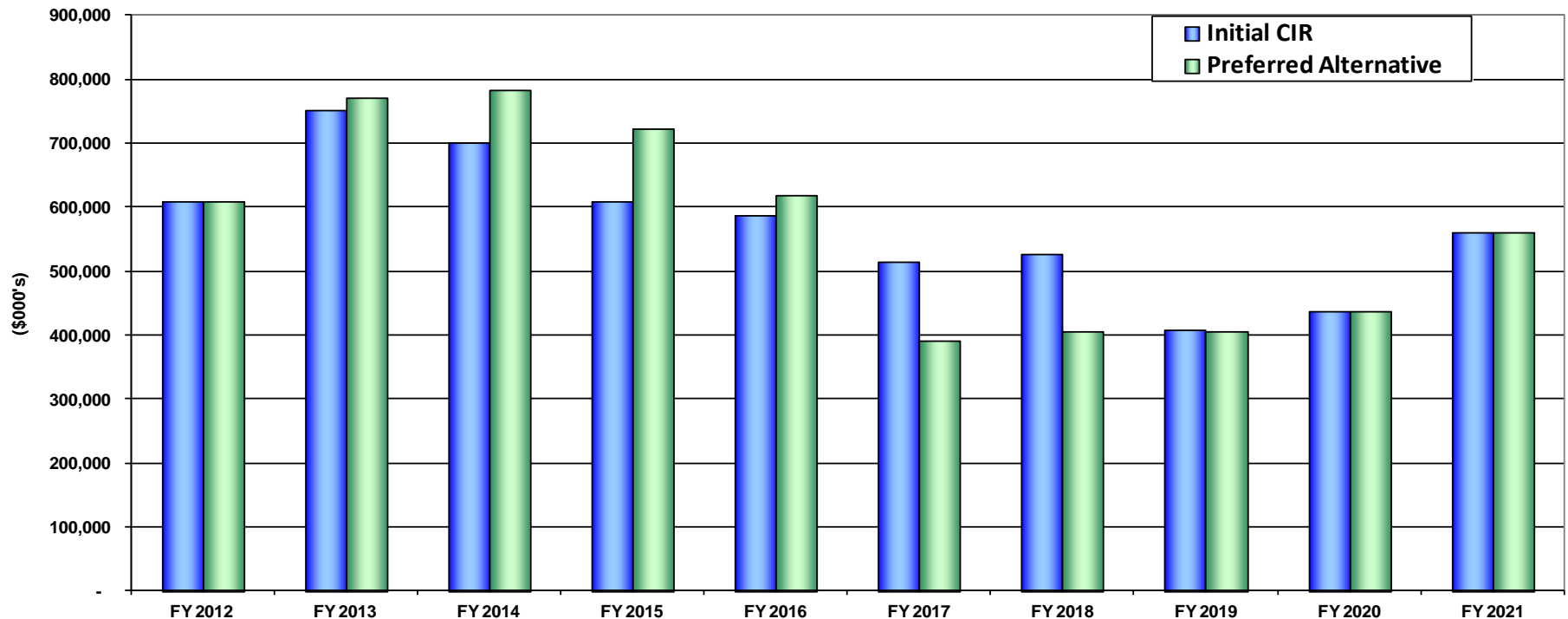
	Current rate period		Next rate period		4-Year Total	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	10-Year Total	
	Actuals FY 2011	FY 2012	FY 2013	FY 2014									FY 2015
<b>Capital Costs</b> (excluding AFUDC and Corporate Overheads)													
<b>Transmission</b>													
Sustain Programs:													
AC Substations	12.4	18.2	40.8	39.7	25.9	124.6	17.2	18.0	23.2	23.2	23.2	23.2	252.6
DC Substations	4.7	11.3	11.3	7.2	4.5	34.3	-	-	-	-	-	-	34.3
Control Center	4.9	3.8	7.3	7.4	7.6	26.1	7.7	7.8	7.0	7.0	7.0	7.0	69.6
Power Systems Control and Telecom.	19.9	22.1	85.1	70.0	59.0	236.2	47.7	29.6	37.3	37.3	37.3	37.3	462.7
Rights of Way	17.7	24.1	26.1	23.4	23.6	97.2	17.7	17.7	11.3	11.3	11.3	11.3	177.8
System Protection and Control	5.8	7.4	26.2	29.0	28.1	90.7	34.8	28.3	21.7	21.7	21.7	21.7	240.6
Steel Lines	14.9	32.7	28.4	16.5	12.6	90.2	12.9	13.1	11.5	11.5	11.5	11.5	162.2
Wood Pole Lines	36.4	29.1	43.5	59.0	40.1	171.7	38.1	40.9	36.0	36.0	36.0	36.0	394.7
TEAP Tools	1.0	0.9	1.0	1.0	1.0	3.9	1.1	1.0	1.1	1.0	1.1	1.1	10.3
Expand Program:													
Main Grid	118.2	216.1	158.3	112.6	116.8	603.8	189.6	160.0	163.0	43.0	74.0	194.0	1,427.4
Area and Customer Service	12.9	13.2	27.3	17.5	12.1	70.1	10.0	10.0	10.0	10.0	10.0	10.0	130.1
Upgrades and Additions	54.5	53.7	28.9	23.0	19.0	124.6	21.5	21.4	17.5	17.0	16.5	16.0	234.5
Subtotal	303.3	432.6	484.2	406.3	350.3	1,673.4	398.3	347.8	339.6	219.0	249.6	369.1	3,596.8
PDCI (Celilo) Upgrade Project		1.3	85.4	116.1	93.6	296.4	27.6	-	-	-	-	-	324.0
Transmission Indirects (Capitalized)	45.4	41.5	45.6	46.1	47.0	180.2	47.9	48.9	49.9	50.9	51.9	52.9	482.6
Projects Funded In Advance	81.3	45.2	45.0	35.0	25.0	150.2	25.0	25.0	32.0	32.0	32.0	32.0	328.2
Total with Indirects and PFIA	430.0	520.6	660.2	603.5	515.9	2,300.2	498.8	421.7	421.5	301.9	333.5	454.0	4,731.6

# Transmission Asset Strategy

## *Preferred Alternative Strategy*

The preferred alternative has the same total ten year investment as the initial CIR forecast

- The alternate forecast keeps the I-5 Corridor and Northern Intertie projects on the originally proposed schedule



# Transmission Asset Strategy

Questions?