



Our Road to **Excellence**

Brad Sawatzke, Chief Nuclear Officer
April 30, 2014
For NWCCC

Energy Northwest

A not-for-profit
Municipal Corporation



Provide our public power members and regional ratepayers with safe, reliable and cost-effective power



Energy Northwest



A not-for-profit
Municipal Corporation

Asotin County PUD

Benton County PUD

Chelan County PUD

City of Port Angeles

City of Richland

City of Centralia

Clallam County PUD 1

Clark Public Utilities

Cowlitz County PUD

Ferry County PUD

Franklin County PUD

Grant County PUD

Grays Harbor County PUD

Jefferson County PUD

Kittitas County PUD

Klickitat County PUD

Lewis County PUD

Mason County PUD 1

Mason County PUD 3

Okanogan County PUD

Pacific County PUD

Pend Oreille County PUD

Seattle City Light

Skamania County PUD

Snohomish County PUD

Tacoma Public Utilities

Wahkiakum County PUD



Energy Northwest

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Packwood Lake Hydro-
electric Project (27 MWe)



Nine Canyon Wind Project
(96 MWe)



White Bluffs Solar Station
(38 KWe)



Columbia Generating
Station (1,170 MWe)





Safety 1st

Safety 1st – 2012



American Public Power Association Safety Award



Safety 1st – 2013



10M Hours

Without a lost-time accident

Plus Lowest-ever
OSHA Accidents – Zero

Safety 1st – 2013



10M Hours

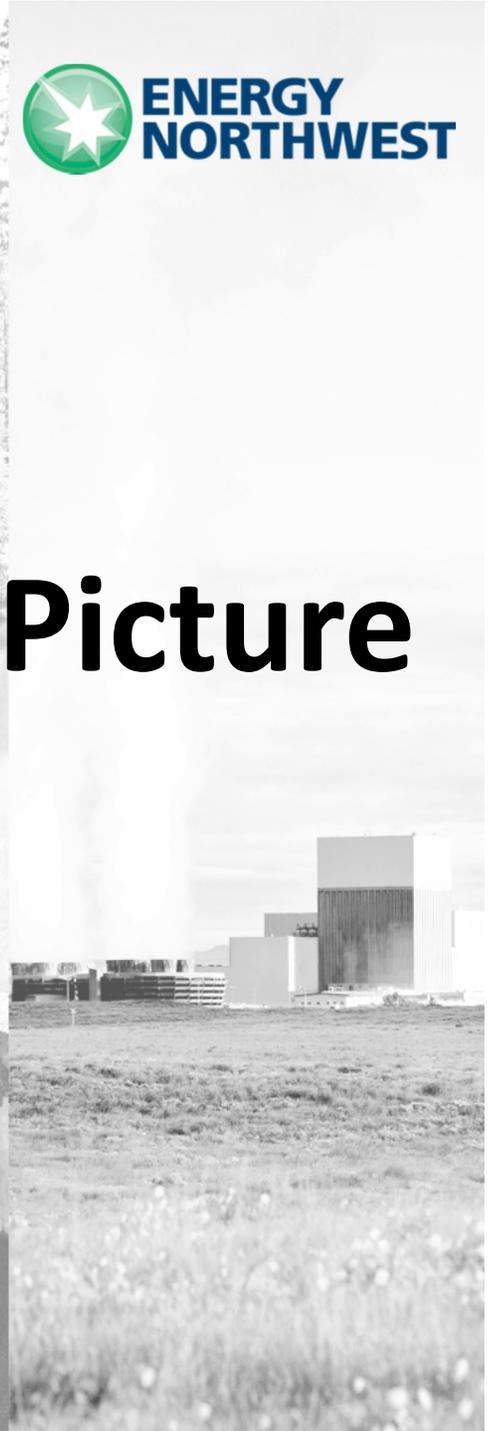
Without a lost-time accident

**Association of
Washington Business
Workplace
Safety Award**





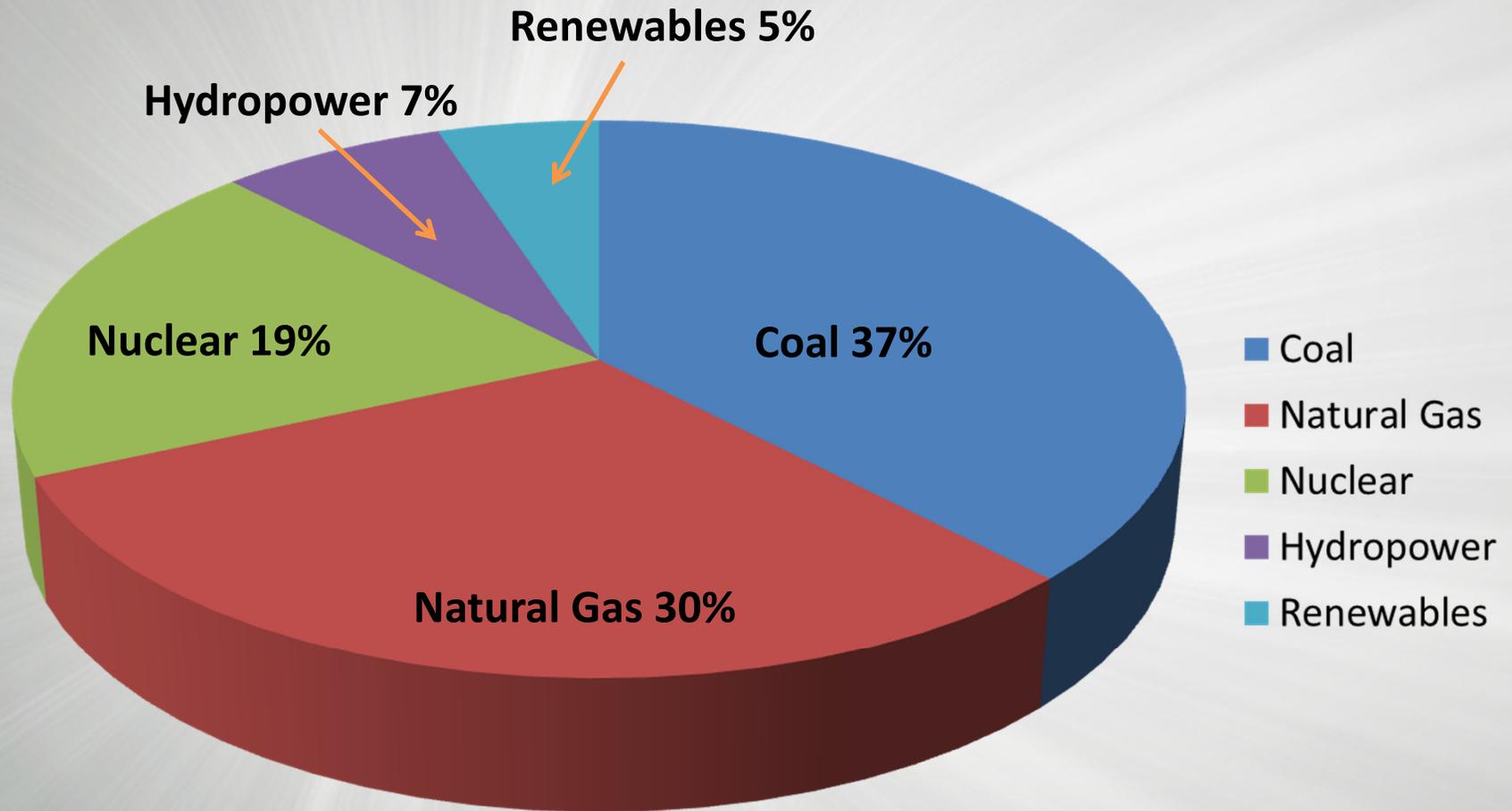
The Northwest Energy Picture



Types of Resources

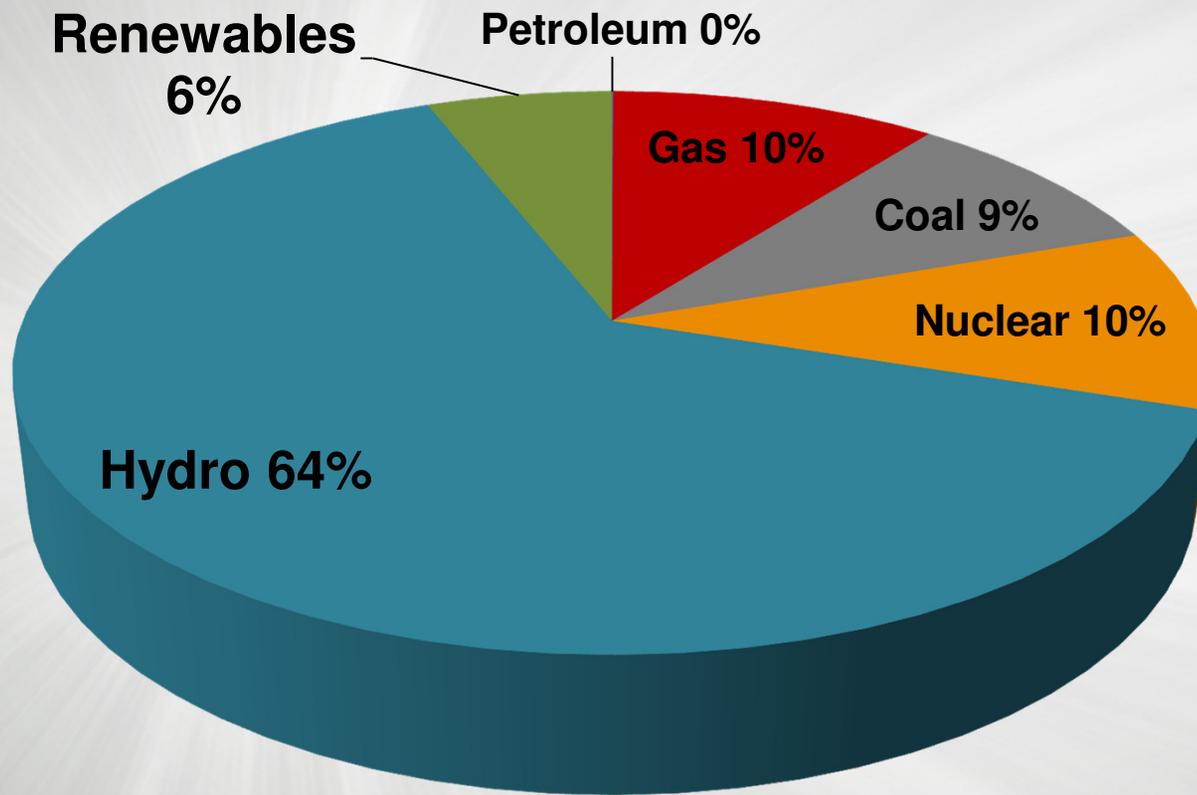
- **Baseload**
 - >80% Capacity Factor (nuclear, coal, geothermal, hydro, cogeneration and biomass)
- **Intermediate**
 - 40%-60% Capacity Factor (Natural Gas Combined Cycle, hydro)
- **Peaking**
 - <20% Capacity Factor (natural gas simple cycle, hydro)
- **Intermittent**
 - Variable Capacity Factor (solar and wind)

U.S. Power Generation (2012)



Source: Energy Power Research Institute

Washington Power Generation (2012)



Source: Energy Information Administration

Power Supply Drivers

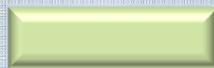
- **Past recent economic conditions have reduced load growth (Source: Bureau of Economic Analysis)**
 - Historical – Robust
 - Current – Improving after dip
 - Future – ?
- **All state utilities “qualified” under Initiative I-937 have met 2012 RPS requirements**
2012 – 3% of load | 2016 – 9% of load | 2020 – 15% of load
- **Future development driven by renewable portfolio standards**

Average Cost of Current Resources

Energy Efficiency



Hydro/Mid-Columbia



Natural Gas Combined Cycle



Nuclear



Coal



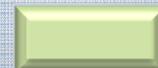
Wind



Geothermal



Solar



\$0 \$20 \$40 \$60 \$80 \$100 \$120 \$140 \$160

Production Costs (\$/MWh) (2012\$)



The Columbia Story

Reliable



Excellence Initiative



Phases of Excellence 2011-2014

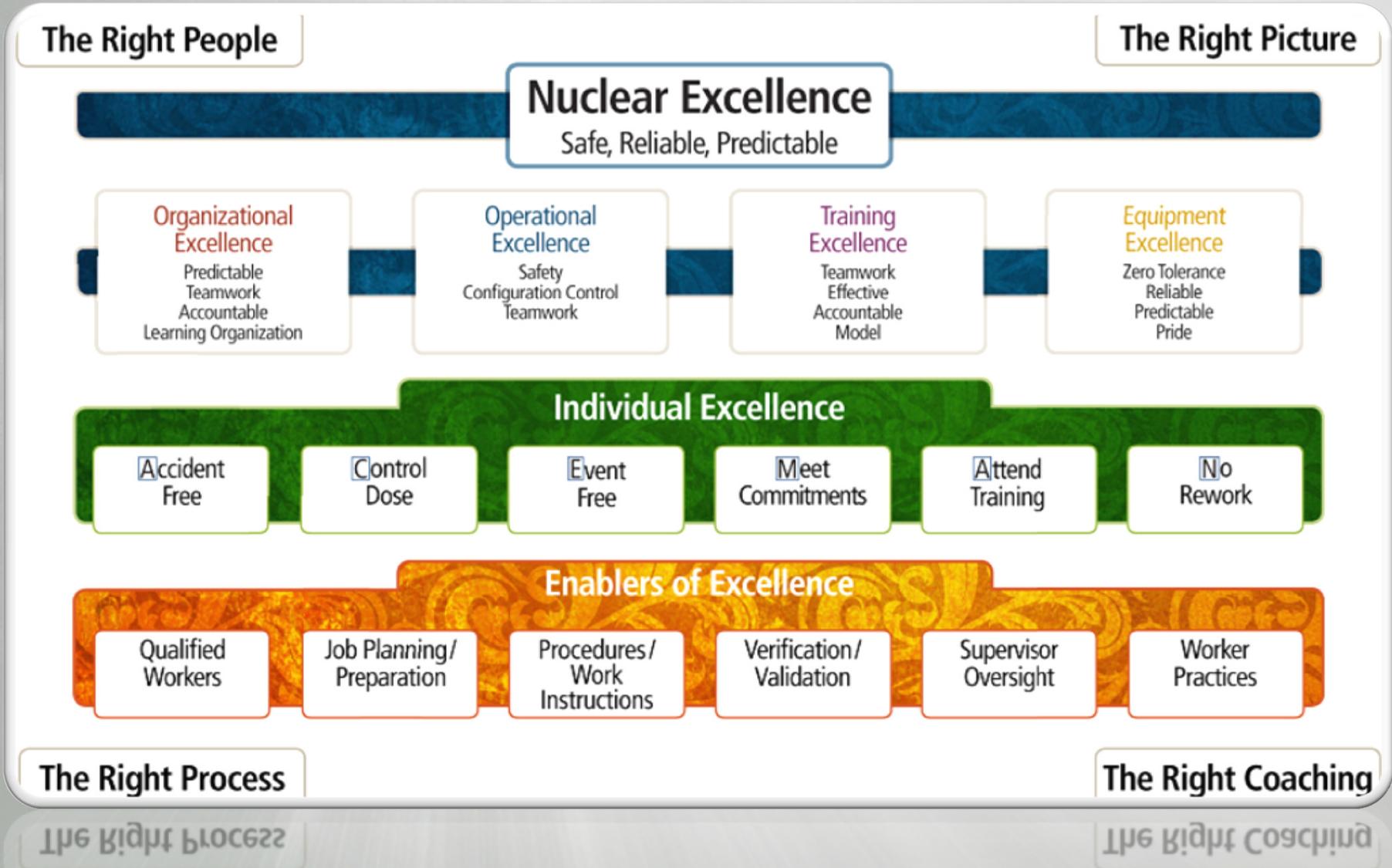
Phase I – Improving Behaviors

Phase II – Demonstrating Results

Phase III – Achieving Excellence

Phase IV – Sustaining Excellence

Excellence Model





Improving Behaviors... Demonstrating Results



Equipment Reliability



– 2011 – Refueling Outage 20



9,333,708

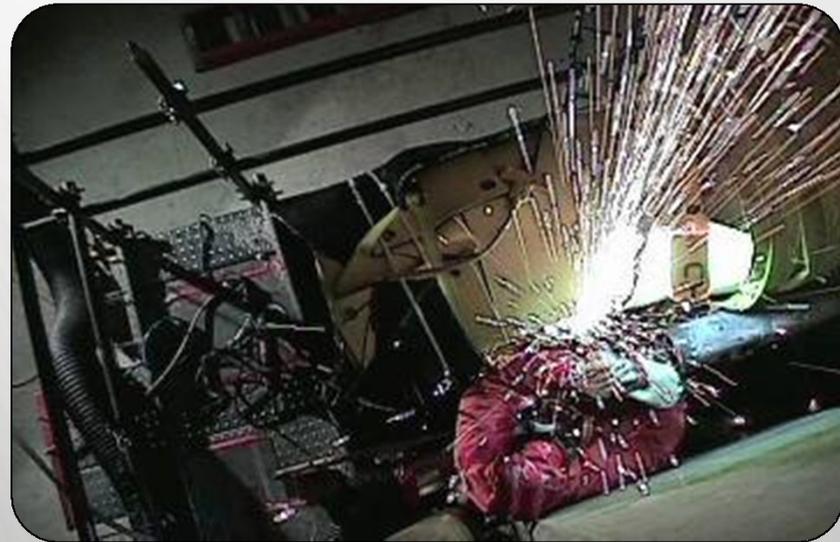
Columbia pushed more than
9.3 million megawatt hours
of electricity to the regional
power grid in 2012



A Turning Point



– 2013 – Refueling Outage 21



8,479,000

Columbia pushed nearly
8.5 million megawatt hours
of electricity to the regional
power grid in 2013



4 1/2 Years

...operating without an
unplanned shutdown.





Regional Value



License Renewal



1984 – 2043



Gov. Christine
Gregoire

Regional Savings



\$190,000,000

Energy Northwest and BPA collaboration on decommissioning fund and debt management provided the region \$190 million in rate relief in the next rate period

Regional Savings



The uranium tails fuel purchase agreement will generate more than \$88 million in additional BPA savings through the current and next rate case.

\$88,000,000

Uranium Tails Fuel Transaction

Regional Savings



\$171M – 275M

We expect total savings to be between \$171 and \$275 million for Northwest ratepayers

Uranium Tails Fuel Transaction

The Way Ahead



- \$160M 10-year capital increase
- Capitalize large projects
- Charge proper labor to capital
- 2014-23: increase in capital spending, reduced O&M costs



Lower costs for next four BPA rate cases

Columbia Value Study



Increased Costs to Consumers

SCENARIOS

\$0

Continued Columbia Operation

\$1,053,000,000

5-Year Columbia Outage With Replacement Power From Market

\$2,554,000,000

Columbia Shutdown With Replacement Power From Natural Gas

(At Expected Gas Prices, No CO₂ Costs. Note: Gas Price Forecasts May Range from \$1,053,000,000 to \$11,553,000,000)

\$5,419,000,000

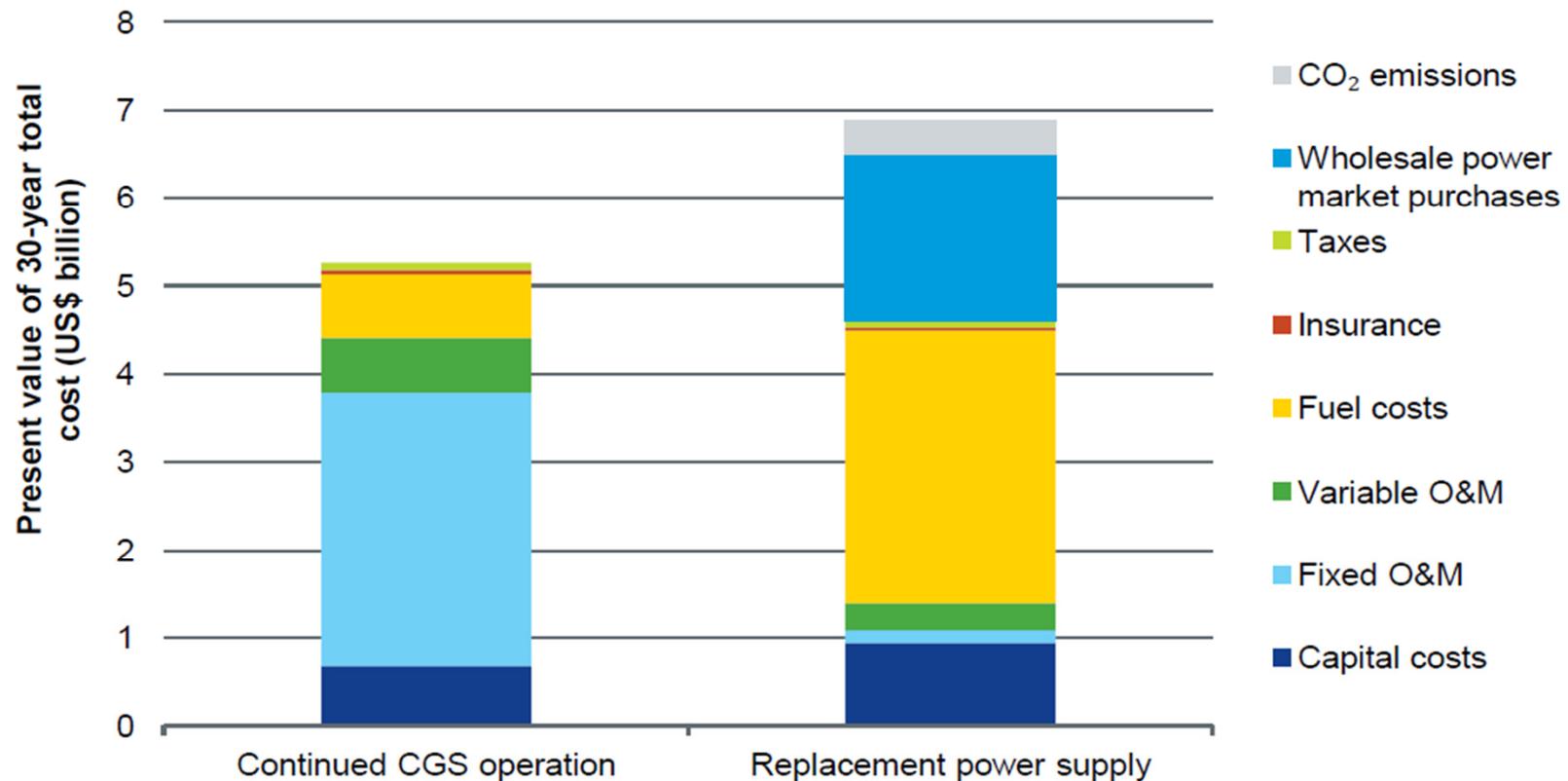
Columbia Shutdown With Replacement Power From Natural Gas

(Expected Gas Price, With CO₂ Costs)

IHS Cambridge Energy Market Assessment



Costs of continued operation of CGS versus replacement power supply, 2014–43



Note: O&M = operation and maintenance
Source: IHS CERA

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Small Modular Reactor Proposal

A screenshot of the Energy Northwest website homepage. The header includes the Energy Northwest logo and navigation links for "Board Meetings", "News & Information", and "Emergency Information". Below the header is a main navigation bar with "WHO WE ARE", "OUR ENERGY PROJECTS", "DOING BUSINESS WITH US", and "ENERGY 101". The main content area features a large graphic of a Small Modular Reactor (SMR) with the text "SMRs Safe, simple, small, and economical nuclear power". Below this are several blue buttons with white text and play icons: "CAREERS", "EDUCATORS", "POLICY MAKERS", "BUSINESS SOLUTIONS", and "MEMBER UTILITIES".

Board Meetings News & Information Emergency Information

ENERGY NORTHWEST

WHO WE ARE OUR ENERGY PROJECTS DOING BUSINESS WITH US ENERGY 101

SMRs

Safe, simple, small, and economical nuclear power

CAREERS EDUCATORS POLICY MAKERS BUSINESS SOLUTIONS MEMBER UTILITIES

www.energy-northwest.com



Thank you.