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**Costs of
Eliminating Coal
and DWP
Resolution on IPP
2nd Amendatory
Power Sales
Contract**



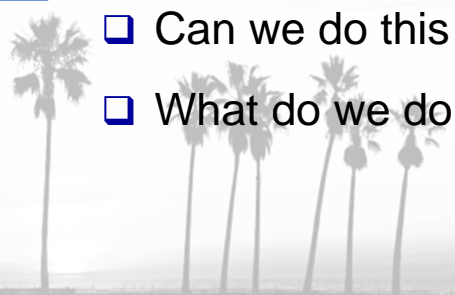
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Ratepayer Advocate's Questions on IPP and Coal Elimination

- ❑ What does the Office of Public Accountability/Ratepayer Advocate (OPA) recommend?
 - Support the DWP Resolution on execution of the IPP 2nd Amendatory Power Sales Contract today. This is the first step for all IPP participants to plan ahead.
 - Today's plan is too expensive.
 - ✓ DWP, IPP, and the City should continue exploring alternatives on the elimination of coal.
 - ✓ Today's specific generation plan isn't, and hopefully should not become, the default plan.
 - ✓ Different mixes of conservation, renewables, gas-fired generation sources, fuel / power storage, and other alternatives should be explored over the next 7 years.
- ❑ What is OPA's view on the goals?
 - Reliable power at reasonable cost
 - Compliance with legal mandates on coal elimination, but need transparency on cost.
 - Leadership on carbon emission reduction
 - ✓ Worldwide, DWP is 0.04% of CO₂ emissions.
 - ✓ Our impact can come from demonstrating CO₂ emission reductions at an affordable cost.
- ❑ What is the projected cost to Ratepayers for LA's overall coal elimination?
- ❑ Is that projected cost acceptable compared to alternatives for CO₂/GHG reduction?
- ❑ Can we do this cheaper while achieving goals?
- ❑ What do we do next?



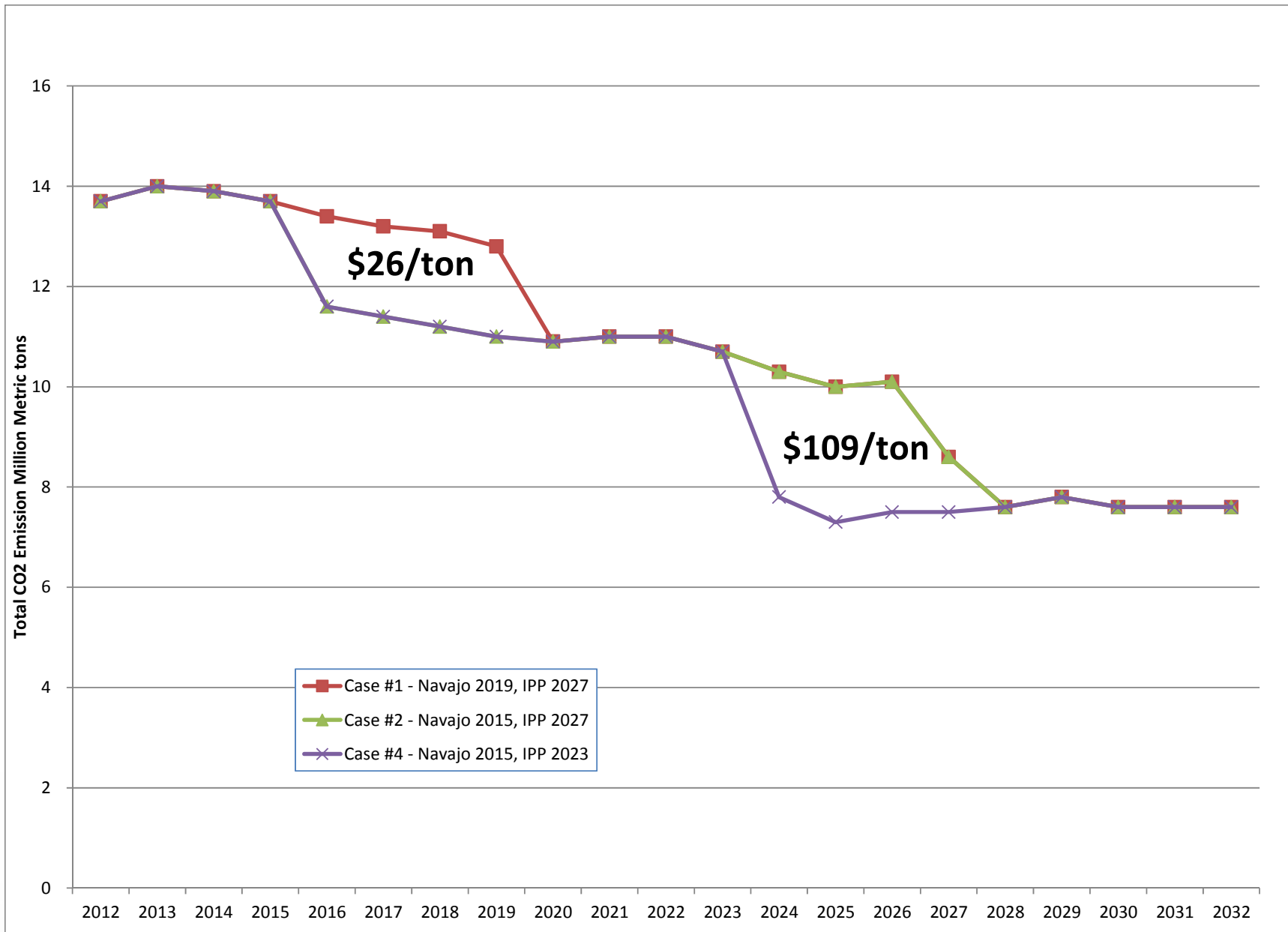
What is the cost to Ratepayers for coal elimination?

| | Navajo | IPP |
|-----------------------------------------------------------------|--------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| State mandate for end of long-term contracting | 2019 | 2027 |
| City's planned year | 2015 | 2025 |
| Cost per year for accelerating coal elimination | ~ \$50 million/year | ~\$250 million/year |
| Total cost of accelerating coal elimination under existing plan | \$200 million | \$500 million |
| Cost per person (4 million LA population) | \$1.04 per person/month | \$5.21 per person/month |
| Uncertainties in cost estimate | Natural gas prices Coal plant retrofit cost Plant sale cost Renewables cost | Natural gas prices Renewables cost Coal plant retrofit cost |

Source for costs: LADWP 2012 IRP, Figure 4-22



What is LADWP's cost of CO₂ reduction from coal elimination?



Source for costs and carbon reduction:
LADWP 2012 IRP, Figures 4-22 & 4-4



How does LADWP's cost of CO₂ reduction compare to alternatives? Can we do this cheaper?

- ❑ Accelerating phase out of Navajo, in terms of CO₂ reduction at \$26/metric ton, is in the range of earlier expectations for CO₂ emission reduction costs from other emission sources in the 2015-2019 period.
 - “OK deal”
- ❑ Current forecasts for accelerating phase out of IPP, in terms of CO₂ reduction at \$109/metric ton, are much higher than expectation for the value and cost CO₂ emission reductions from other sources in the 2025-2027 period.
 - This estimate depends on the cost of future natural gas, coal generation, renewable sources and the cost of CO₂ reductions from other emission sources
 - Too expensive -- as planned and forecast now, this is “Not a good deal”
- ❑ Can renewables like large-scale wind and solar be expanded in the DWP mix, using the IPP location as a hub?
 - Cost of renewables and natural gas have both declined by huge factors over last 5 years.
 - Cost of integrating renewables while maintaining reliability is still very uncertain. We have about 7 years to explore alternatives before specific permitting and construction actions must be taken to meet the accelerated 2025 deadline.



What's next for DWP's Coal Elimination Strategy and IPP?

- ❑ Bottom line: OPA supports the strategy, with a warning on the cost
 - OPA supports DWP Resolution on IPP 2nd Amendatory Power Sales Contract
 - ✓ Discussions with LADWP and City Attorney: The IPP 2nd Amendatory Power Sales Contract allows exploration of alternatives among the many parties without the loss of rights on IPP generation and transmission
 - After all IPP parties agree to the IPP 2nd Amendatory Power Sales Contract, the next step for the IPP parties is the IPP Renewal Power Sales Contract.
 - This IPP Renewal Power Sales Contract should allow for continued flexibility in the technology and scale of any new facilities.
- ❑ Climate Change and Coal Elimination
 - Climate change is a world problem. Directly, LADWP's total CO₂ emissions are only 0.04% of world CO₂ emissions
 - DWP and California, however, can play a leadership role in showing CO₂ emission reductions can be accomplished in a cost effective manner.
- ❑ The DWP strategy for the 2020's and IPP needs more creative solutions to reduce the cost impacts
 - Continue exploring alternatives like wind/solar renewables and using the IPP site for integrating renewables.

