

# US election: implications for gas and power markets

Public Webinar | October 9, 2024

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### Agenda

- I. Introduction to today's session
- II. Historical market and policy activity
- III. 2024 campaign landscape
- IV. Modelled scenarios
  - 1. Scenario overview
  - 2. Trump Presidency scenario

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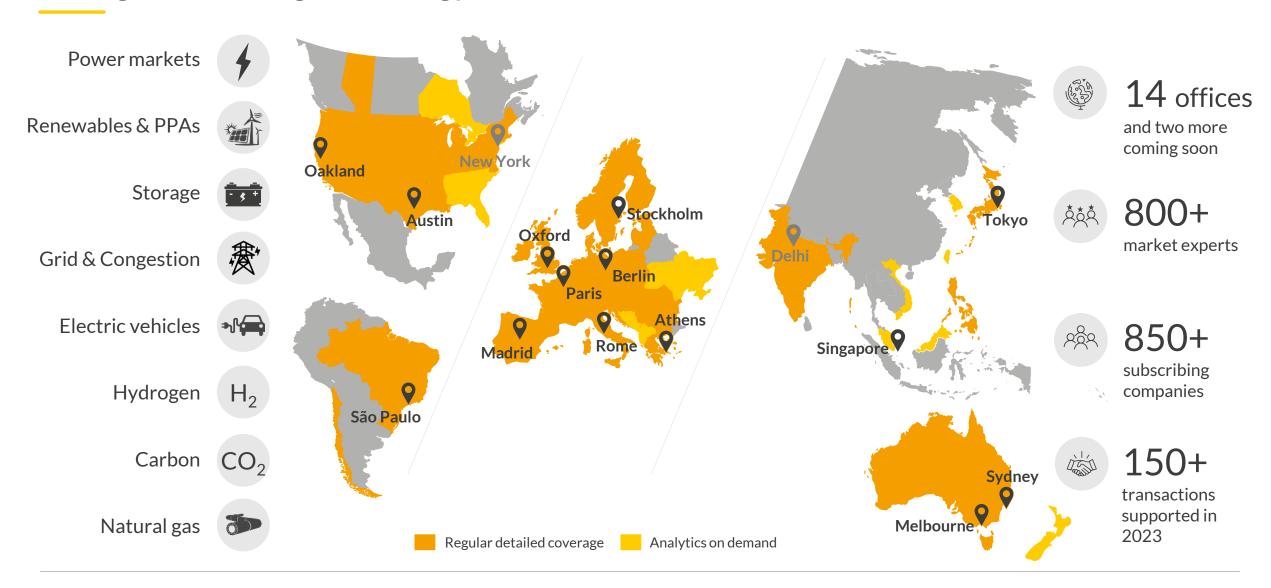
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Sources: Aurora Energy Research CONFIDENTIAL 3

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Sources: Aurora Energy Research CONFIDENTIAL 6

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### Trump and Biden have approached energy policy differently; Biden's policies have bolstered clean energy infrastructure and tax credits

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**Paris Climate Agreement** June 2017

Trump announced intention to leave Paris Accord. The decision went into effect November 2020.

| Affordable Clean Energy rule June 2019

Trump replaced the Obamaera Clean Power Plan with Affordable Clean Energy rule, effectively reducing EPA's targeted emissions reduction. Infrastructure and Investment Jobs Act (IIJA)<sup>1</sup> November 2021

The IIJA allocated \$65bn for transmission, remainder of \$1.2tn budget allocated towards physical and human infrastructure.

**EPA's MATS update** February 2023

The EPA<sup>3</sup> updated the Mercury and Air Toxics Standard (MATS) to 2011 rule imposing more stringent emissions rules on toxins emitted from coal-fired plants.

EPA's GHG rule

**April 2024** 

The EPA enacted a limit on greenhouse gas emissions, suggesting CCS retrofit or hydrogen blending for compliance. The rule is currently facing litigation.

2017 **Trump presidency**  2021

Biden presidency

2025

**TBD** 

**China tariffs** 

January 2018

Trump imposed 50% tariffs on solar panels from China amid wider trade war. China retaliated with 10% tariffs on US LNG.<sup>2</sup>

**Paris Climate Agreement** January 2021

Biden re-joined coalition of 175 countries pledging to reduce emissions.

Inflation Reduction Act (IRA) August 2022

The IRA included \$366bn<sup>4</sup> for clean energy, extending and expanding tax credits and funding for other clean energy infrastructure.

**EPA's Good Neighbor Plan** March 2023

The EPA updated the Cross-State Air Pollution Rule. More stringent NOx allowances on designated thermal generators in 23 USstates. The rule is currently facing litigation.

**China tariffs** 

June 2024

Biden imposed higher tariffs on energy products from China, including solar panels, batteries, and electric vehicles.

<sup>1)</sup> Also known as the Bipartisan Infrastructure Deal. 2) Tariffs on US LNG rose to 25% in June 2019. 3) Environmental Protection Agency. 4) Latest estimates from the Congressional Budget Office have increased estimated spending from IRA.

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## In terms of commodities policy, the Trump and Harris administrations primarily differ on federal land leases, GHG regulations and LNG exports

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Summary of stances on key policies between the Trump and Harris campaigns. Direct quotes in orange.

	Trur	mp	Harris		
Provision	Historical action	Policy stance	Historical action	Policy stance	
Oil and gas leasing	The Trump/Pence administration held frequent leasing auctions for drilling on federal land and removed environmental barriers on drilling permitting, such as rolling back the National Environmental Policy Act (NEPA).	Trump's "Drill, baby, drill" slogan suggests a continuation of oil and gas leasing auctions for federal territory and removal of Biden-era environmental barriers to oil and gas permitting.	Harris during her 2020 primary bid: "There is no question, I'm in favour of banning fracking." The Biden administration increased royalty rates for oil and gas leasing, suspended leasing auctions for a year, and introduced GHG regulations which slowed drilling permitting.	Harris' manifesto proclaims she will "protect public lands and public health," signaling a likely continuation of Biden-era reductions in oil and gas leasing on federal territory. However, recent rhetoric suggests she could move in the opposite direction and encourage federal leasing.	
Methane regulations	Trump previously rolled back regulations on methane emissions introduced under the Obama administration.	Trump would likely scrap methane regulations re-introduced by Biden and the EPA, including the Methane Emissions Reduction Program and Waste Emissions Charge <sup>2</sup> .	Biden and Harris re-introduced methane regulations previously removed under the Trump administration and introduced the Methane Emissions Reduction Program and Waste Emissions Charge <sup>2</sup> .	A Harris administration would likely fully implement the Methane Emissions Reduction Program and would support new and pending EPA methane regulations <sup>2</sup> .	
Coal mining	Trump reversed an Obama-era moratorium on coal-mining leasing in Wyoming's Powder River Basin (PRB).	Similarly, Trump would presumably end the Biden administration's moratorium on new leases in the PRB.	The Biden administration supported clean energy projects near closed coal mines through the Energy Community provisions of the IRA and proposed a moratorium on coal-mining leasing in the PRB.	Coal mining on federal land would likely fall under increased scrutiny, with Biden-era moratoria likely to be extended.	
LNG exports	Tariffs levied against Chinese imports resulted in China levying tariffs on US LNG imports. FERC approved six LNG projects <sup>3</sup> .	Trump would immediately remove Biden's LNG pause, favouring rapid expansion and deregulation of the LNG industry to strengthen the US's position as a leading LNG exporter.	The Biden administration paused issuance of new licenses for LNG exports to all countries lacking an FTA until the DoE updates its environmental criteria for such projects. FERC approved three projects <sup>4</sup> .	In line with historical action, Harris would likely see through the imposition of more stringent environmental criteria for the approval of LNG exports.	

<sup>1)</sup> Trump's historical action referring to the Trump/Pence administration, Harris' historical action referring to the Biden/Harris administration. 2) See appendix for further detail on the IRA's Methane Emissions Reduction Program and the EPA's Waste Emissions Charge, 3) Freeport train 4, Gulf LNG, Eagle LNG, Venture Global Plaguemines, Texas LNG, Rio Grande LNG, 4) Venture Global Calcasieu Pass, Driftwood LNG, Alaska Gasline,

## The two candidates' administrations have historically approached subsidies for renewable and fossil fuel power generation differently

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Summary of stances on key policies between the Trump and Harris campaigns. Direct quotes in orange.

	Trui	mp	Harris			
Provision	Historical action	Policy stance	Historical action	Policy stance		
Renewables and storage	The Trump administration passed extensions for full PTC and ITC benefits for renewables projects in both 2019 and 2020.	Campaign desire to fund an extension of Trump's 2017 tax cuts may put some tax credit provisions at risk. However, some Republican lawmakers have a strong interest in maintaining IRA-funded projects in their constituencies.	The Biden administration passed the IRA and IIJA, including significant funding for clean energy generation, manufacturing, and infrastructure. The IRA made PTCs available to solar and ITCs available to standalone batteries. Both credits were extended beyond a 10-year horizon and overhauled in the form of gradated requirements for additional credit.	Harris is expected to continue disbursal of IRA and IIJA funding, as well as providing IRS guidance on IRA provisions for clean electricity tax credits.		
Electricity generation from fossil fuels	In 2017, the DoE proposed a rule to FERC for coal subsidies which was unanimously rejected. The administration also removed legal justification for MATS <sup>2</sup> and replaced the CPP <sup>3</sup> with the Affordable Clean Energy Rule, defanging EPA emissions-reduction targets.	May present further challenges to EPA rules, may reattempt to pass subsidies for coal plants.	Under Biden, the EPA strengthened its existing MATS <sup>2</sup> and CSAPR <sup>4</sup> regulations as well as putting forth a new Greenhouse Gas Rule.	Harris has promised to "hold polluters accountable" for air and water pollution and will likely build upon Biden-era regulatory efforts. Efficacy of these efforts will likely be limited due to corporate and state litigation against EPA rules, such as the Good Neighbor Plan and the Greenhouse Gas Rule.		
Nuclear energy	The same 2017 FERC rule proposal included subsidies for nuclear plants, which was unanimously rejected by FERC.	In light of campaign promises to "unleash nuclear energy," a second Trump administration could propose additional standalone subsidies for nuclear plants.	As part of the IRA, the Biden administration extended PTC opportunities to existing nuclear plants.	Harris would likely work to keep existing nuclear generation online and would see through pending guidance on "pink" hydrogen.		

<sup>1)</sup> Trump's historical action referring to the Trump/Pence administration, Harris' historical action referring to the Biden/Harris administration. 2) Mercury Air Toxics Standards. 3) Obama's Clean Power Plan. 4) Cross-State Air Pollution Rule.

## Both Trump and Harris campaigns have deployed protectionist rhetoric around trade and manufacturing, with varying impacts on energy

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Summary of stances on key policies between the Trump and Harris campaigns. Direct quotes in orange.

	Trun	np	Harris		
Provision	Historical action	Policy stance	Historical action	Policy stance	
Tariffs	During his term, Trump implemented a 25% tariff on steel and a 10% tax on aluminium. He additionally established a flat 25% tariff on Chinese goods, which initiated a trade war until negotiation of the Phase One agreement.	The 2024 Trump Manifesto promises a "50% tariff on all Chinese goods and 10% tariff on the rest of the world, across the board."	Biden levied additional tariffs on over \$18 billion of Chinese goods imports, including renewable technologies. He also replaced Trump's blanket tariffs on steel and aluminium with tariff-rate quotas for the EU and UK.	Harris is likely to retain Biden's tariffs, promising to combat "unfair trade practices" from China and other international trade partners.	
Electric vehicles	Trump proposed ending EV tax credits during his 2017-2020 term, but did not follow through.	Trump's 2024 manifesto calls for "cancelling the EV mandate," referring to EPA rules for reducing car manufacturer fleet-wide emissions.	The IRA included provisions for EV tax credits, and the IJA funded charging stations. The Biden administration also introduced new EPA regulations with strict fleet-wide emissions standards.	Harris would presumably work to overcome existing litigation against new EPA rules while continuing the buildout of infrastructure funded through the IIJA.	
Clean energy manufacturing	NA	Potential to show support for clean energy manufacturing efforts given support for onshoring manufacturing and given much investment in Republican states.	The IRA introduced PTC and ITC provisions for the sourcing and production of domesticallymanufactured clean energy components.	A Harris administration would presumably continue the allocation of funding procured through Biden-era legislation such the IRA, CHIPS, and IIJA.	
Clean hydrogen	NA	NA	The IIJA included funding for regional hydrogen hubs, and the IRA made the development of clean hydrogen eligible for tax credits.	Harris likely to continue funding regional hydrogen hubs, unclear final hydrogen tax credit criteria.	

<sup>1)</sup> Trump's historical action referring to the Trump/Pence administration, Harris' historical action referring to the Biden/Harris administration.

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**Key figures** 

## A Trump administration could roll back some IRA and IIJA provisions, but would face challenges in implementing a comprehensive reversal

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A priority for Republicans if Trump takes office in 2025 may be to extend tax breaks set in place by Trump in 2017. The \$4.6tn required to fund these cuts could be clawed back from various IRA, IIJA, and CHIPS provisions. Several opportunities and challenges (many related) exist in the pursuit of weakening energy provisions in place today.

#### Opportunities to weaken energy provisions in place today

Opportunities <sup>1,2</sup>	Description	Most relevant provisions <sup>2</sup>	Challenges	
Influence tax code guidance	The President appoints Secretary of the Treasury and IRS commissioner. For all guidance not yet released, Trump's Treasury will have the ability to write it. For all guidance already passed, the Treasury would have the ability to rewrite (via Congressional Review Act) or reinterpret these implementation rules. A trifecta is not necessary.	<ul> <li>Tax credits with guidance not yet final: domestic content adder, hydrogen tax credits, EV tax credits, clean aviation fuel tax credits.</li> <li>Tax credit phaseout schedule. Sooner phaseout schedule for clean energy tax credits (currently is 2033 step-down or 75% power sector emissions reduction based on 2022 levels, whichever is later).</li> </ul>	<ul> <li>Biden administration's speed. Prior to the November election, the administration may attempt to expedite release of final guidance/funds</li> <li>Bipartisan support. There is some Republican support from the deployment of clean electricity projects and manufacturing, as evidenced by pushback to Project 2025's call to end clean electricity tax credits and support for onshoring manufacturing jobs.</li> <li>Special interests. Support from oil and gas to create strong clean hydrogen environment, Elon Musk as Trump's single biggest supporter.</li> <li>Lengthy process. Notice and comment period for reviewing/rewriting tax credit guidance could take years.</li> </ul>	\$1.1tn  Congressionally appropriated money for energy, climate, technology, and infrastructure investments  <17%  Less than 17% has been appropriated as of April 2024 (based on Politico analysis)
Pause funding	Significant portions of funding in the IRA and IIJA have not yet been allocated, leaving funding vulnerable to clawbacks.	<ul> <li>IIJA funding: regional hydrogen hubs, EV infrastructure funding.</li> </ul>	<ul><li>See points above.</li></ul>	\$4.6tn
Repeal credits	Through achieving a trifecta (President and both chambers of Congress with party majority), the party faces fewer obstacles to passing legislation, exacerbated by a favorable Supreme Court.	<ul><li>EV tax credits</li><li>Renewables tax credits</li></ul>	Senate supermajority. For the easiest time passing legislation, a supermajority of Republican senators is necessary. The likelihood of the Senate achieving at least 60 Republican senators (supermajority) is unlikely based on current polls. <sup>3</sup> The House is more of a tossup.	Estimated cost of renewing Trump's 2017 tax cuts
			<ul> <li>Legal challenges. States may challenge clawbacks if it challenges funding.</li> <li>Ig (especially for offshore wind) is another potential measure, but it remains unclear how likely</li> </ul>	-

<sup>1)</sup> List is non exhaustive, focusing on key areas of analysis from expert groups on tax and legal provisions. 2) Slowing permitting (especially for offshore wind) is another potential measure, but it remains unclear how likely or possible this is. 3) According to projections from Ballotpedia, sourced on following slide. If supermajority is not achieved, possible to use budget reconciliation to pass bills with simple majority (like Democrats with the IRA). Sources: Aurora Energy Research, Norton Rose Fulbright, Politico, Ballotpedia

Along with the Presidential election, 468 Congressional

November. All House of

open.

seats are open for election this

Representative seats are open (two-year election cycles), and

33 Senate seats out of 100 are

Trump and Biden both enjoyed

Senate majorities during their presidencies<sup>4</sup>, having House majority only for the first two

years of each Presidents' terms.

House and Senate (218/435 or

greater in the House, 60/100 or

greater in the Senate), passing

legislation will be difficult for

the incoming administration.

 Given this difficulty, it is unexpected for policies by

either campaign to go unchallenged by Congress.

Without a majority in both

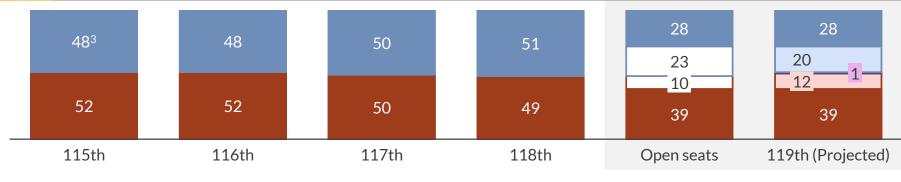
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## Control of both chambers of Congress is contested this November: all House seats and thirty-three Senate seats are up for election

Congressional representation 2016-2024 and potential November election outcomes<sup>1</sup>



Senate<sup>1</sup> In an evenly divided Senate, 33 seats will be contested in November. As of 12 September, the Republican Party is projected to control 50 seats. Winning one of two closely contested elections would grant them a technical majority.







1) Ballotpedia snapshot of 4 polls from 24 Sep 2024. 2) The seat vacated by George Santos is included in the Republican tally. 3) Includes Independent members of the Democratic Caucus. 4) Vice President Harris broke the tie in a 50-50 Senate.

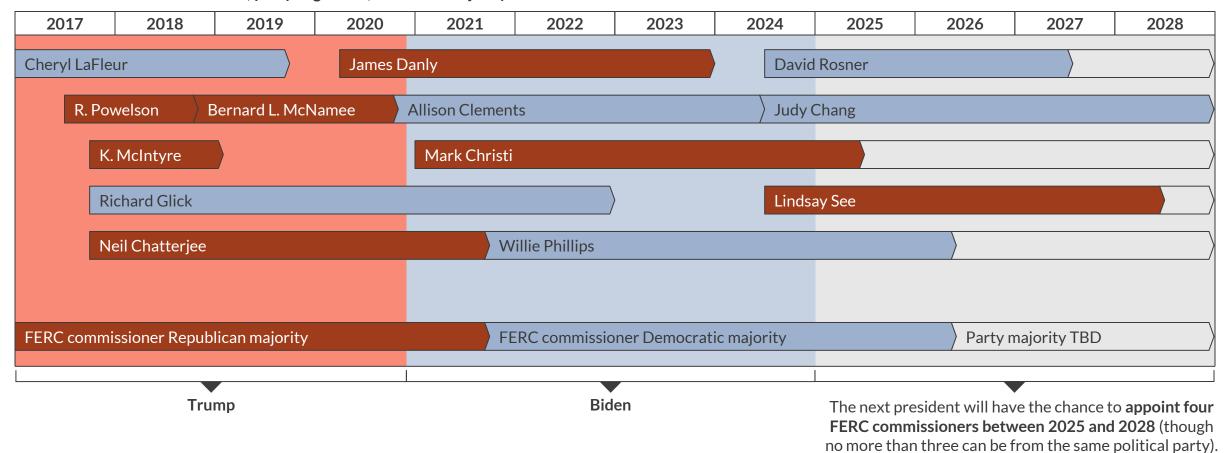
Sources: Aurora Energy Research, Ballotpedia

## FERC commissioners will remain a Democratic majority through mid-2026; the new president will be able to appoint four commissioners

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FERC (Federal Energy Regulatory Commission) is an independent, bipartisan agency that regulates the interstate transmission of electricity, natural gas, and oil. FERC is comprised of up to five commissioners in staggered five-year terms; no more than three commissioners may be from the same political party. The commissioners are selected by the President and confirmed by the Senate.

#### Timeline of FERC commissioners, party alignment, and FERC majority



<sup>1)</sup> Collette Honorable and Norman Bay were also FERC commissioners in 2017 but left off of this graph as their service ended within the year.

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## We modelled a range of scenarios to reflect various outcomes under a Trump or Harris election in November

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Input changes to Trump and Harris Presidency scenarios and sensitivities (impacts relative to Aurora Central)

		• Sensit	ivities		•	Sensitivities
Policy area <sup>1</sup>	<b>Trump Presidency</b>	LNG Overbuild <sup>2</sup>	Project 2025	Harris Presidency	Federal Leasing Ban <sup>2</sup>	Green New Deal <sup>3</sup>
Subsidies	<ul><li>Slower EV uptake.</li><li>Delayed coal retirements.</li></ul>		<ul> <li>As Trump Presidency</li> <li>Tax credit support for wind, solar, and batteries ends in 2025.</li> </ul>			<ul> <li>Faster overall electrification.</li> <li>2 p.p. lower cost of capital for renewables (Green Bank).</li> <li>Tax credit support stays constant through horizon at 2024 levels.</li> </ul>
Tariffs	<ul> <li>50% tariff on Chinese imports and 10% tariff across the board, with no retaliation tariffs.</li> </ul>		As Trump Presidency			
Permitting		<ul> <li>Expediting LNG terminal approvals and facilitating rapid expansion of 130mtpa (+54%) more capacity by 2031.</li> </ul>		<ul> <li>No new LNG terminals built in the US apart from those that have reached FID or are under construction prior to Harris' presidency.</li> </ul>	<ul> <li>As Harris Presidency</li> <li>Additional ban on new oil and gas leases on federal territory.</li> </ul>	<ul> <li>As Harris Presidency</li> </ul>
Other						<ul> <li>Regions with carbon prices<sup>4</sup> see those increase to their respective caps by 2050.</li> <li>Lower coal prices to reflect lower demand for coal due to faster coaplant retirements</li> </ul>

<sup>1)</sup> Tariffs and federal oil and gas leasing represent changes to gas price modelling only, all other input changes reflect changes to power market modelling only. 2) Results only available for gas price results, not power markets. 3) Does not include compliance with the EPA's Greenhouse Gas Rule. 4) CAISO, ISO-NE, PJM, and NYISO are fully covered; MISO assumes only states with a Democratic governor.

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## Aurora forecasts that, while US natural gas flows will markedly shift under either presidential candidate, impacts on Henry Hub gas prices will be minimal



	Trump Presidency	Harris Presidency	
© ≡ Scenario	50% tariff on Chinese imports and 10% tariff on the rest of tworld, as per Trump's proposal.	he No new build LNG terminals in the US beyond existing and under construction terminals, due to stricter emissions criteria.	
	Modelling out	comes	
இத் Gas demand	Trump tariffs encourage consumer switching and buildout of domestic industries, increasing US gas demand % by 2040		
Gas dellialid	Trade flows from China to the US decrease, depressing Chine gas demand growth.	ese	
US LNG exports	Trump tariffs reduce international demand for US LNG exports % by 2040, particularly from China.	Constraining LNG buildout <b>limits availability of US export volumes</b> % <b>by 2040</b> , hindering Asia's coal to gas transition	
US gas production	No significant change from Central.	Production is marginally lower due to lower international demand for US gas.	
Pipeline flows	Net Canadian imports increase by % by 2040 to supply additional domestic demand in the North.	Net Canadian imports fall by 8 by 2040.	
	Henry Hub wholesale price delta with Central \$/MMBtu (real 2023)		
。 ∕i Henry Hub gas	XX	Both Trump and Harris scenarios are somewhat	
price	XX XX XX	XX XX bearish, within % by 2040, on Henry Hub.	
	2025-2030 2031-2035	2036-2040 Harris Trump	

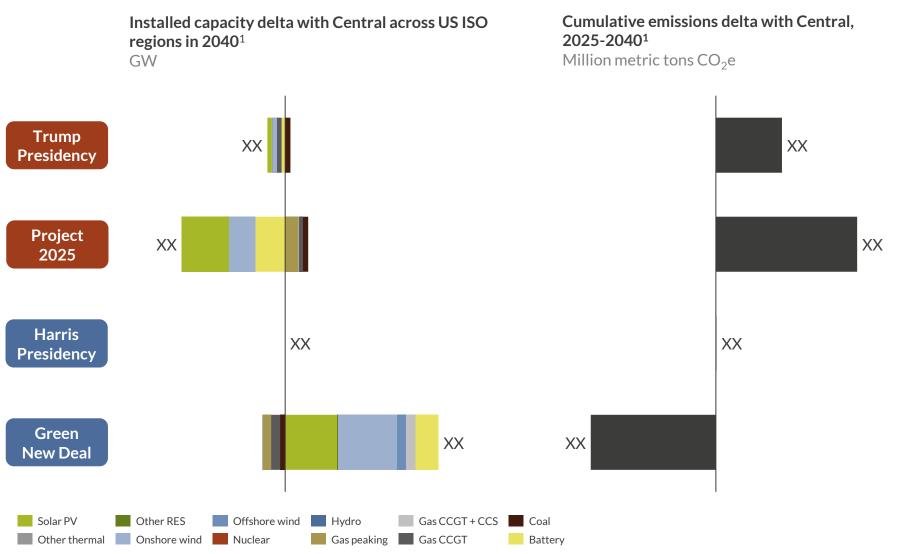
Sources: Aurora Energy Research

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**Power market results** 

## Control of the presidency has little impact on the energy transition, but ending renewables tax credits cuts buildout by 2040 by XX GW



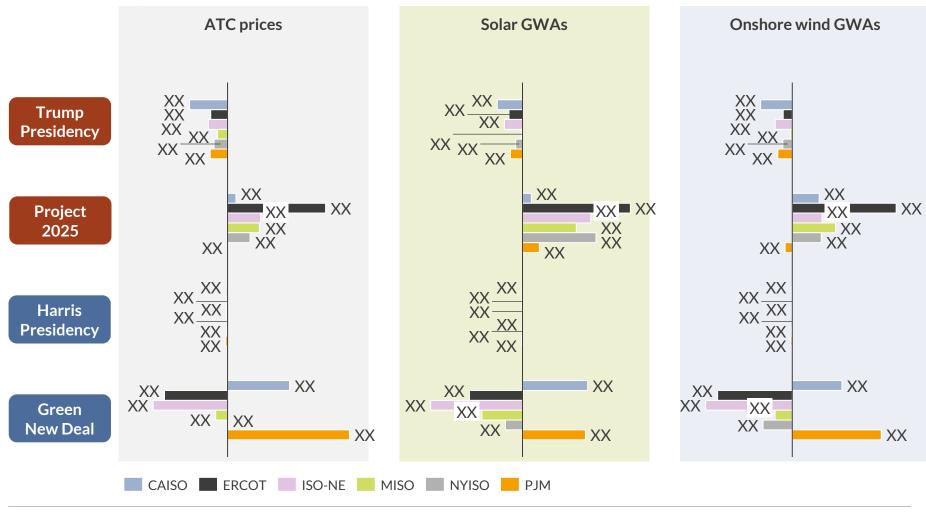
1) Sum across CAISO, ERCOT, ISO-NE, MISO, NYISO, and PJM, Excludes SPP as well as WECC, and SERC non-ISO regions,

- Slower EV uptake and coal subsidies depress renewables buildout slightly under the baseline Trump scenario.
- A Harris Presidency is represented as a continuation of Biden-era energy policy and so closely tracks Aurora Central.
- The removal of renewables tax credits in the Project 2025 sensitivity sees GW less of renewables buildout by 2040 -% less than in Aurora Central.
- Maintenance of tax credits and higher carbon prices in the Green New Deal sensitivity spurs buildout of GW more renewables, % more than in Aurora Central.
- Thermal subsidies and delayed retirements raise emissions in the Trump Presidency scenario and Project 2025 sensitivity. with 2025-40 total emissions reaching % and % of 2022's power sector levels, respectively.

## Lower prices in a Trump presidency are primarily due to reduced EV demand, not generation changes

Price deltas with Central by US ISO (2025-2040 average)

\$/MWh (2023 real)



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**Power market results** 

- Despite promises to "unleash American energy" through increased fossil-fuel drilling, prices under a Trump presidency see little change.
- The Project 2025 scenario's elimination of tax credits for renewables sees power prices rise across the country, with ERCOT particularly vulnerable due to its lack of a capacity market and its scarcity adder.
- GWAs rise disproportionately as reduced buildout limits solar and wind cannibalisation.
- The Green New Deal scenario sees higher EV demand and faster electrification raise prices in CAISO, but continued support for renewables and higher carbon prices decrease power prices across other ISOs.
- PJM is the only exception, as the expansion of RGGI to encompass the entire ISO forces earlier coal retirements.

Sources: Aurora Energy Research CONFIDENTIAL 20

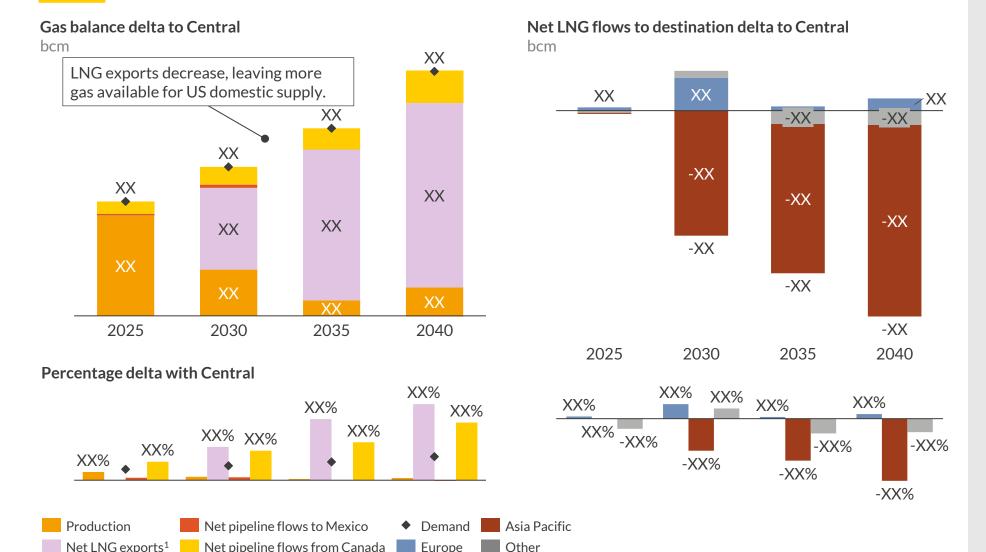
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Net LNG exports<sup>1</sup> Net pipeline flows from Canada Europe

## Despite no major impact to US natural gas prices, US LNG exports decline by XX% by 2040



- Trump tariffs increase US gas demand in the US to bcm (+ %) by 2040, as more expensive imports encourage switching to domestic production.
- The reduction in imports to the US marginally dampens economic growth globally, particularly in China, which has the highest tariff levels. This reduces global gas demand for export production and US LNG exports decline bcm (- %) by 2040, mainly towards the Asia Pacific.
- Lower international demand outweighs the increased domestic demand for gas after 2030, depressing US gas prices below Central.

<sup>1)</sup> Net LNG exports increase leaving less supply for demand within the US, which removes from the gas balance. Net pipeline exports to Mexico decrease which also adds to the US gas balance. 2) Excluding LNG boil-off.

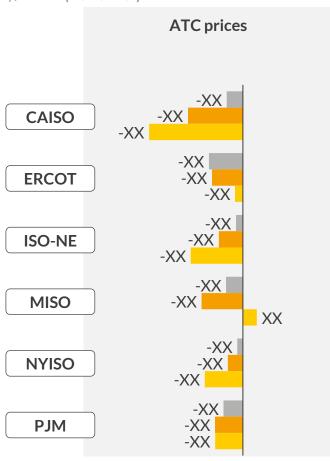


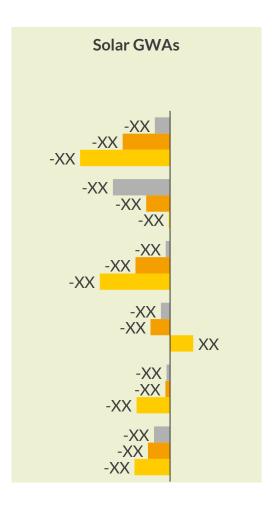


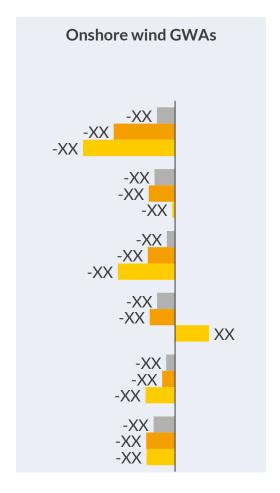
## Lower natural gas prices, slower EV uptake, and delayed coal retirements pressure power prices downwards across all ISOs

#### Price deltas with Central by US ISO

\$/MWh (2023 real)







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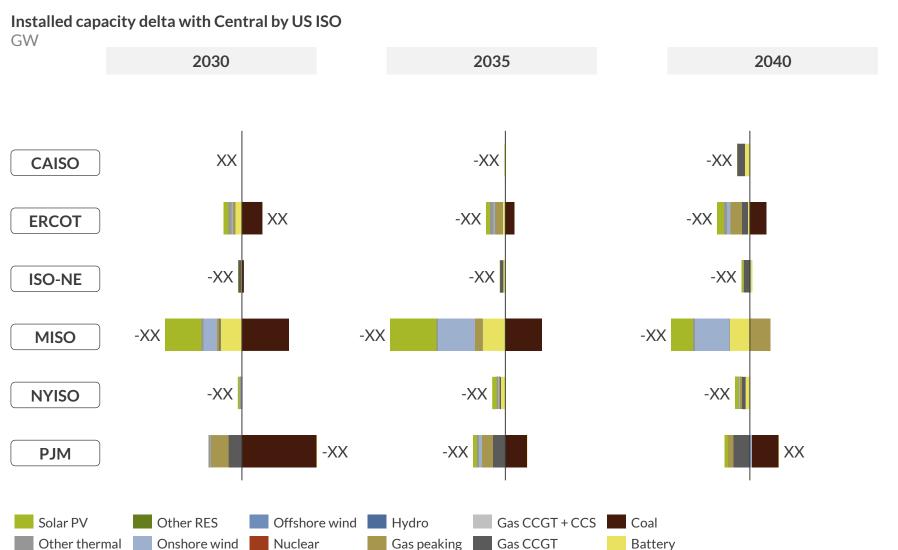
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- Lower gas prices affect all power markets, though the impact is relatively small.
- CAISO sees the greatest impact of a Trump Presidency scenario, primarily due to slower EV uptake. Demand from electric vehicles makes up a significant portion of demand in CAISO ( % by 2030 in our Central case, compared to < % in other ISOs), and slower uptake has a significant impact on CAISO's power prices.
- Delayed coal retirements have a large impact in ERCOT, MISO, and PJM where most coal is online today. Slower coal retirements lead to an oversupply of capacity, helping drive down capacity market clearing prices and reducing scarcity value in ERCOT's energy-only market.

2025-2030 average 2030-2035 average 2035-2040 average

Sources: Aurora Energy Research CONFIDENTIAL 23

## Delayed coal retirements mostly impact ERCOT, MISO, and PJM, where wind/solar build slows and other capacity retires faster



1) In MISO, only four states (IL, IN, MI, and MN) currently have RPS targets, of which only MN is above 50% by 2040.

- Subsidies towards coal generation assumed as part of the Trump Presidency scenario see plants stay online into the 2040s in PJM and ERCOT and into the 2030s in MISO.
- MISO in particular sees substantially less development of renewable sources than in Aurora Central, driven by a relative lack of state RPS targets<sup>1</sup> to incentivise development beyond the horizon for IRA tax credits.
- Flexible energy in MISO and ERCOT suffers across the forecast, with some additional gas peaking capacity coming online in the late 2030s in lieu of batteries as per Aurora Central.
- ERCOT and PJM see faster CCGT retirements, driven in part by more coal online reducing CCGT load factors and worsening economics.

### Thank you to all the participants for attending today's session

We look forward to continuing the conversation via bilateral sessions.

For all comments and questions, you can reach Olivier Kerr at <u>Olivier.Kerr@auroraer.com</u>, Martin Anderson at <u>Martin.Anderson@auroraer.com</u>, and Daniel Perea at <u>Daniel.Perea@auroraer.com</u>.

The next Aurora event will take place on October 24, 2024 at our inaugural Energy Transition Forum in NYC.

Sources: Aurora Energy Research CONFIDENTIAL 25



## Details and disclaimer

Publication: US elections - implications for

gas and power markets Date: September 26, 2024

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