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IRP Technical Conference

March 9, 2020

IRP 2020 Schedule

- March 9, 2020 – Technical Conference
  - Review IRP Standards and Guidelines
  - Review 2019 PSC Order regarding IRP
  - LNG Project Update
  - Sustainability Initiatives Update
- April 23, 2020 – Technical Conference
  - Heating Season Review
  - System Integrity Update
  - Fuel Line Issue Review
  - Wexpro Matters (Confidential)
  - RFP Review (Confidential)
- May 12, 2020 – Technical Conference
  - IRP Project Detail Discussion
  - Long-Term Planning
  - Future Rural Expansion Update
  - Future STEP Project Update

IRP 2020 Schedule

- June 30, 2020– Technical Conference

  Presentation of Integrated Resource Plan

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Agenda

- Review IRP Standards and Guidelines
- Review 2019 PSC Order regarding IRP
- LNG Project Update
- Sustainability Initiatives Update

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IRP Standards and Guidelines (2009)

Guideline	Update
Review latest quarterly variance report	IRP Report, April 23, 2020 Tech Conference
Changes to customer growth models	IRP Report – Customer & Gas Demand Forecast Section
Changes to linear programming optimization (LPO) model (SENDOUT)	IRP Report – Final Model Results Section
Changes to DSM models	IRP Report – Energy Efficiency Section
Supply/demand forecasts, SENDOUT and DSM results	IRP Report – Customer & Gas Demand Section
Gas quality and gas storage issues	IRP Report – Gathering, Transportation, & Storage Section
Changes to Gas Network Analysis (GNA) models	IRP Report – System Capabilities and Constraints
GNA model results	IRP Report – System Capabilities and Constraints
Integrity management issues	IRP Report – Integrity Management Section
Other issues	Scheduled as needed

Review of the 2019 Commission IRP Order

- Commission concluded the 2019 IRP as filed generally complies with the requirements of the 2009 Standards and Guidelines.

- Adopted DEU's commitments set forth in its reply comments.

  We adopt DEU's commitment in its Reply Comments to include an additional subsection labeled "Long-Term Planning" within the "System Capacity and Constraints" section of the IRP, which provides an outline of demand growth trends along with any known future projects beyond the scope of the DNG Action Plan;

  We adopt DEU's commitments in its Reply Comments to provide information related to (a) potential projects related to local and corporate sustainability goals; (b) STEP initiatives under Utah Code Ann. § 54-20-105; and (c) distribution expansion in rural areas.

- DEU shall convene a stakeholder meeting as early as practicable prior to DEU's filing of the 2020 IRP to discuss concerns regarding the sufficiency of information in the IRP.

  Meeting with DPU and OCS scheduled for March 10, 2020.

Proposed 2020 IRP Outline

- Executive Summary
- Introduction
- Customer and Gas Demand Forecast
- System Capabilities and Constraints
- Distribution System Action Plan (DNG Action Plan)
- Integrity Management
- Environmental Review
- Purchased Gas
- Cost-of-Service Gas
- Gathering, Transportation, and Storage
- Sustainability
- Energy Efficiency
- Model Results
- Guidelines
- Appendix

LNG Update

- November 1, 2019 – RFP Issued
- Received bids from 3 contractors
- Evaluation is underway
- March 2020 – Land Purchased
- April 15, 2020 – Contractor selection
- Permitting underway

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Sustainability:
Natural Gas Delivers

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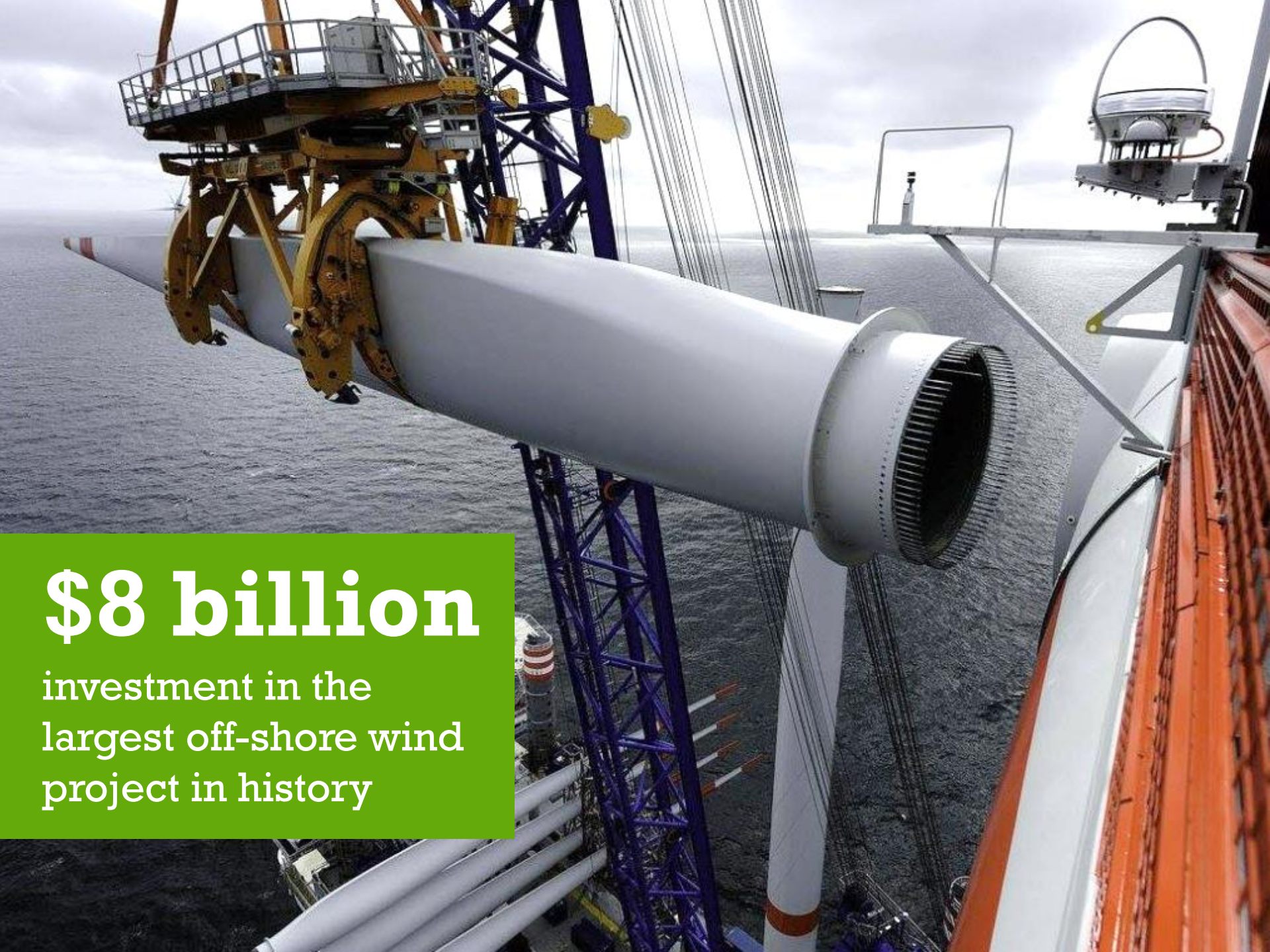
4th largest solar company
in the country



$8 billion

investment in the largest off-shore wind project in history

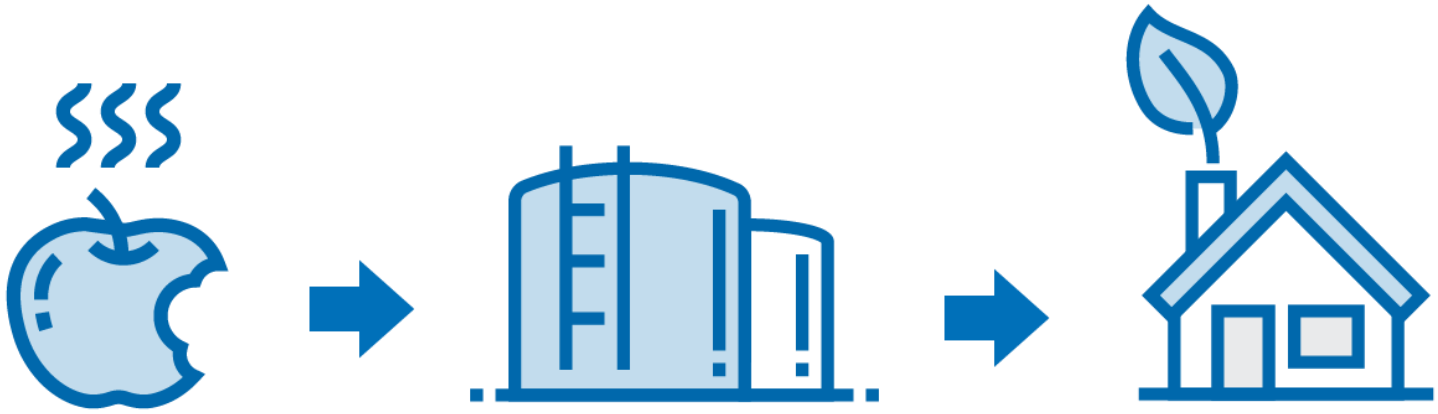

Most powerful
hydro pumped storage
generating station in the world


$1 billion
investment with our partner on renewable natural gas projects

Want renewables?

Natural gas delivers.

How renewable natural gas is produced



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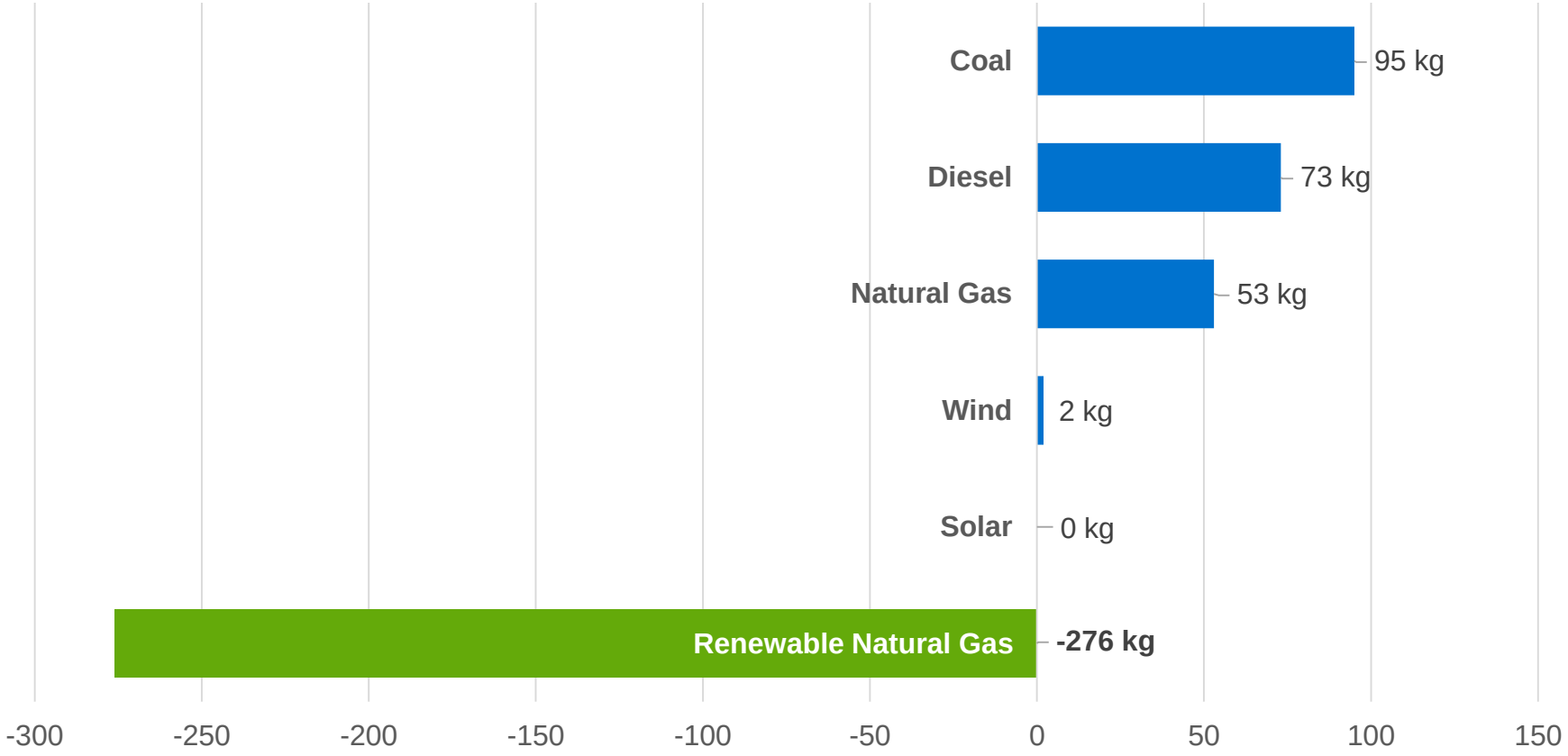
Sustainability: RNG has a negative carbon footprint

CO_2 Emissions (Kg CO_2 per MMBTU)



Source: EIA, Praxair, Extiel GPG, CARB

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Want clean energy?
Natural gas delivers.
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Carbon emissions by home type

An **all-electric** home emits

18 tons

of carbon dioxide (CO_2)

A **natural gas & electric** home emits

14 tons

of carbon dioxide (CO_2)

Source: 2019 REM Rate model (version 15.8) based on Utah's electric generation mix

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Natural gas isn't a major contributor to inversions

Wasatch Front Emissions by Source

(NOx, VOC, PM2.5, NH3 and SO2 combined)

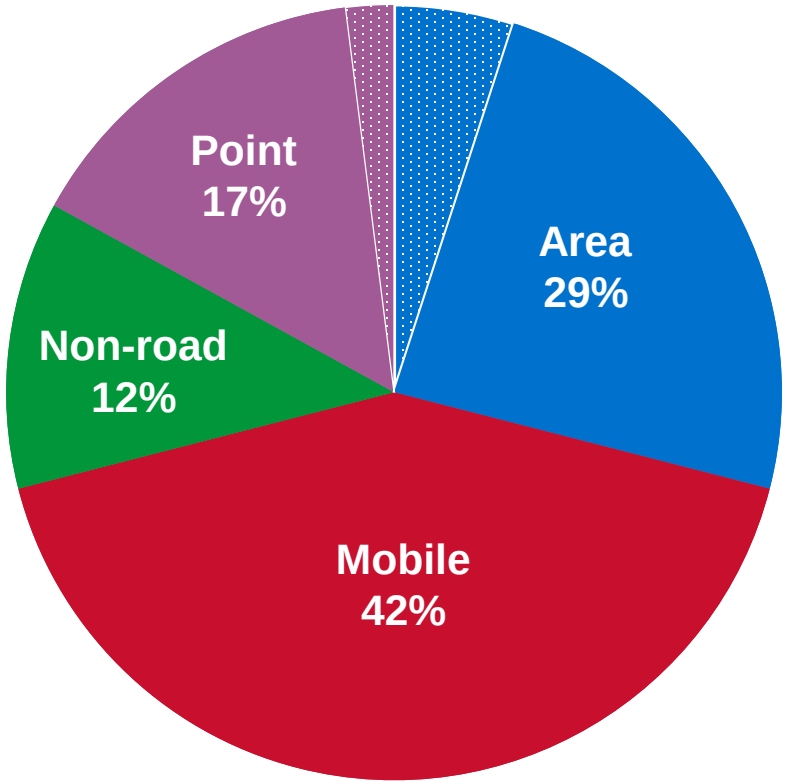
Natural gas contribution is about **7%** of total emissions

Mobile (42%)
Transit buses, short-haul trucks, passenger cars & trucks, motor homes, on-road motorcycles, refuse trucks

Area (29%)
Homes, businesses, agriculture, wood burning fireplaces, fertilizers, paint, mining, dry cleaning, degreasing

Point (17%)
Factories, power plants, sewage treatment

Non-road (12%)
ATVs, boats, motorcycles, golf carts



Source: Division of Air Quality, 2019

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Want reliability?
Natural gas delivers.
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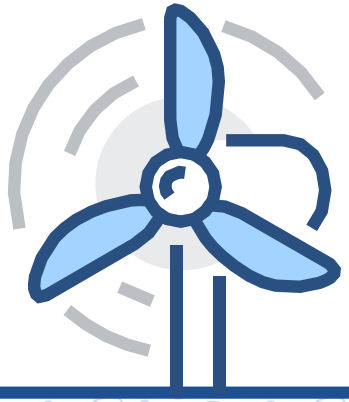
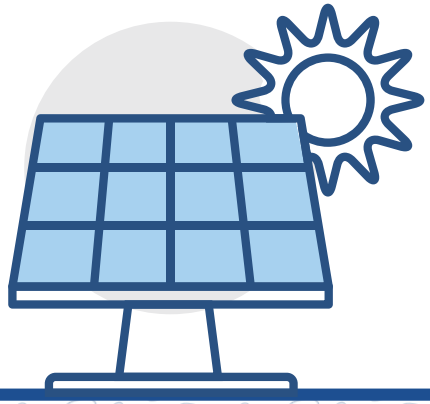
Natural gas enables other renewables

Wind is available **20%** of the time





Solar is available **25%** of the time

Natural gas is available **100%** of the time

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Want affordability?
Natural gas delivers.
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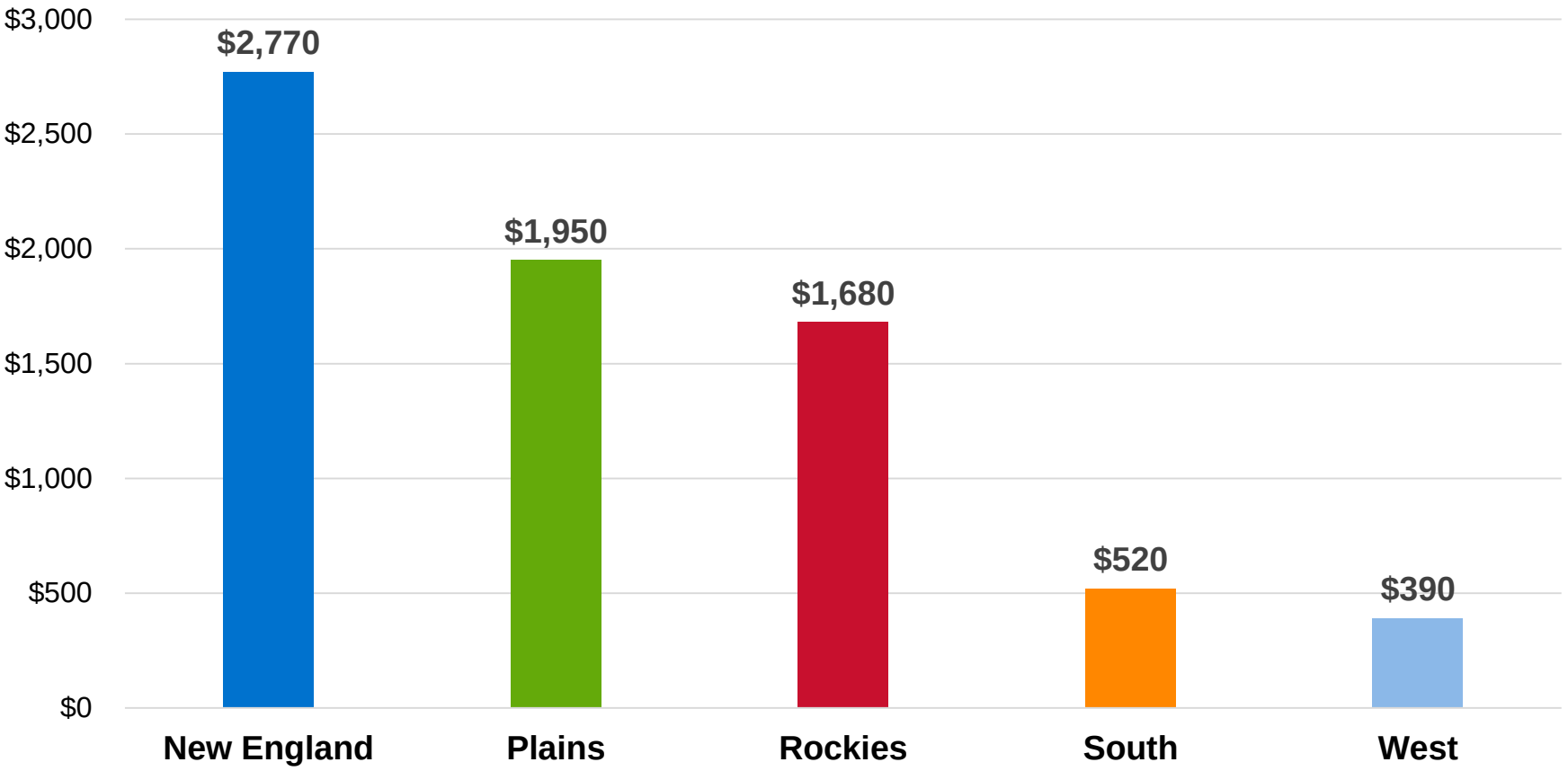
Cost increase per household for all electric



Source: American Gas Association, “Implications of Policy-Driven Residential Electrification”

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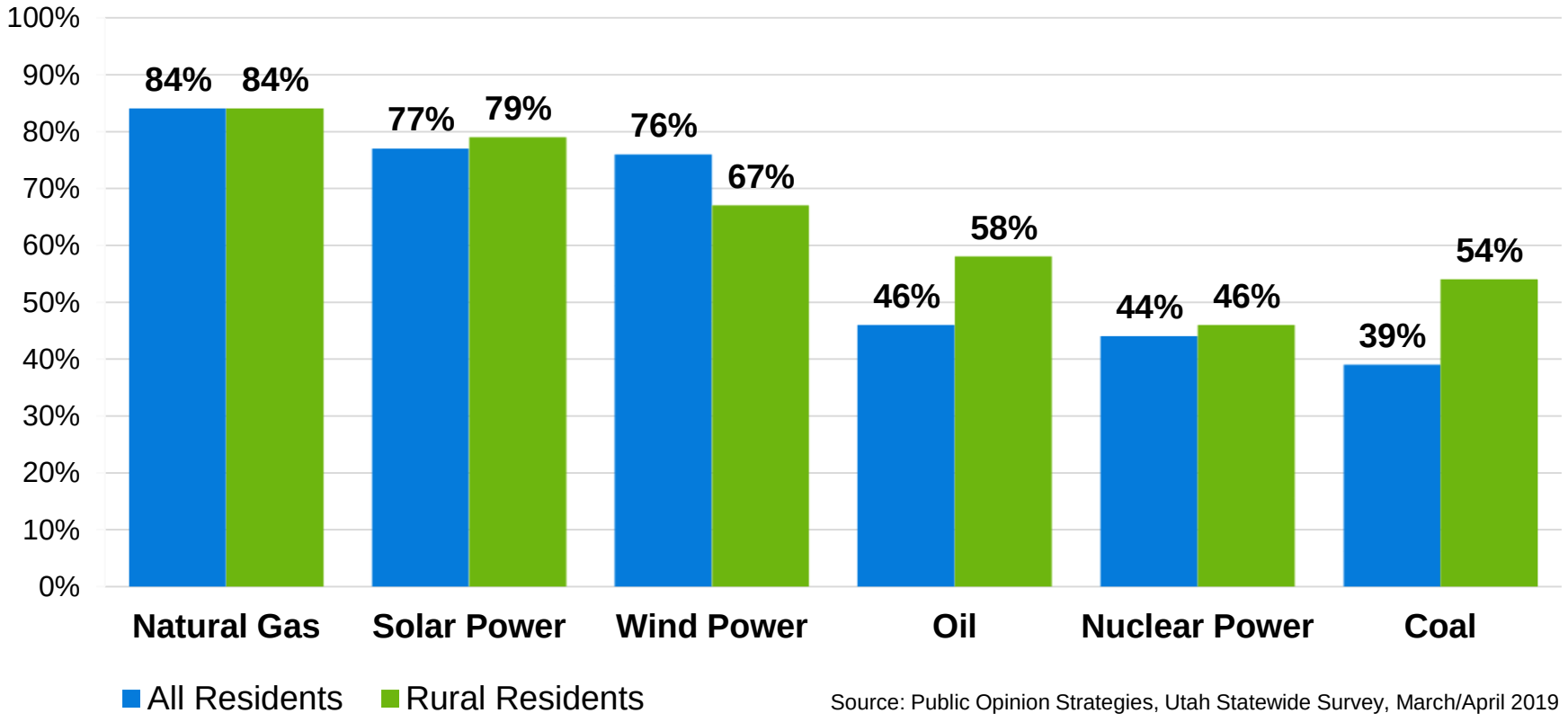
Natural gas is the top-rated energy source in Utah

Statewide vs. Rural Counties

Energy Sources Image (% Favorable)



Source: Public Opinion Strategies, Utah Statewide Survey, March/April 2019

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Committing Ourselves to Our New Vision

Increase energy-efficiency savings by 50% by 2025

Decrease system methane emissions by 50% by 2030

Prepare system to accept 5% Hydrogen blending by 2030

Convert 4% of our system gas to Renewable Natural Gas by 2040

Reducing Our Impact AND Reducing Our Customers' Impact

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Methane Reduction Initiatives

- Replacing Aging Infrastructure
- Hot taps
- Reducing Emissions from Pigging Projects
- Reducing Pressure Prior to Blow Down
- Meter Purge Procedure
- Leak Detection and Repair (LDAR) Program
- Pressure Monitoring at Regulator Stations
- Reduce Third-Party Damages
- Excess Flow Valves
- Wellhead Emission Reductions

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Want a renewable future?
Natural gas infrastructure delivers.
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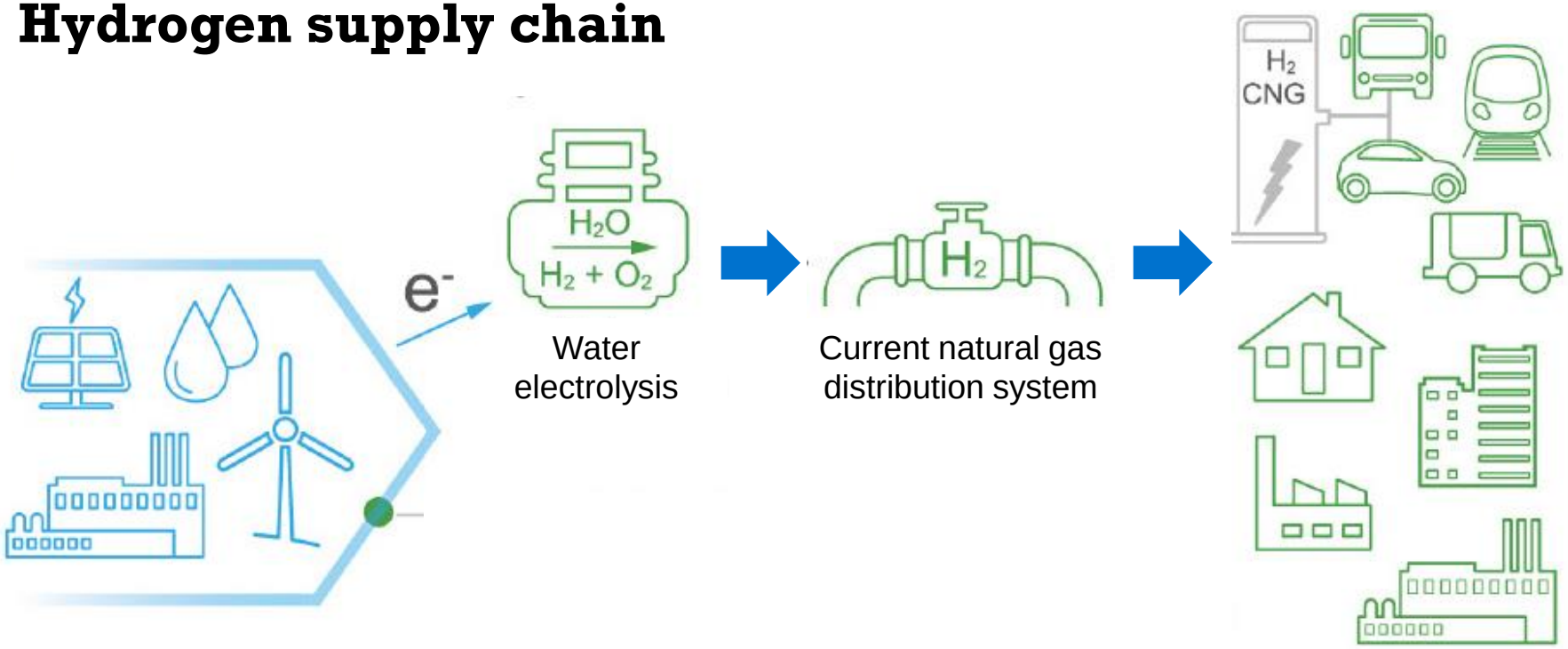
Hydrogen supply chain



Water electrolysis

Current natural gas distribution system

- **Conducting an internal study of Hydrogen for our power generation facilities.**
- **Participating in the HyReady project that is looking at blending Hydrogen with natural gas for a distribution system.**

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GreenTherm℠

- Voluntary renewable natural gas (RNG) program for all Utah customers
- Enrollment: $5 per block (each block is equivalent to 5 therms or ½ dekatherm)
- Customers may purchase as many blocks as they want based on budgetary and environmental goals
- Utah PSC program approval to begin as early as December 2019
- Company began taking customer subscriptions January 31, 2020
- 44 customer enrollments & 79 blocks committed as of 3/6/20