

## ABAG Publicly Owned Energy Resources (ABAG POWER)

### Executive Committee

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February 19, 2020

Agenda Item 7.a.

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### Natural Gas Aggregation Program

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**Subject:** Industry Update: Renewable Natural Gas

**Background:** Renewable natural gas (RNG) is the term that is used to describe a pipeline-quality mixture of biogas produced by the breakdown of organic matter. Biogas can be produced from raw materials such as agricultural waste, manure, municipal waste, plant material, sewage, green waste or food waste. RNG is chemically similar to natural gas but is considered a carbon neutral fuel because it can both avoid the emissions and processes associated with extraction of fossil-based gas, and capture emissions of unused “waste” methane that otherwise would be flared or escape into the atmosphere.

In addition to energy and climate-related benefits, RNG includes the co-benefits of economic development and waste management. Because of this, several jurisdictions and organizations have encouraged the use of RNG to achieve climate-related goals:

- Southern California Gas Company (SoCalGas) seeks to replace 5% of its gas supply with RNG by 2022 and has committed to replacing 20% of its traditional gas supply with RNG by 2030. SoCalGas is also seeking approval to allow customers to voluntarily purchase varying amounts of RNG.
- In 2019, Oregon signed SB 98 into law, which established increasing targets for the use of RNG (30% by 2050) and provides for ratepayer cost recovery.
- CleanBC is the official blueprint for reducing greenhouse gas emissions within British Columbia (BC). It establishes a minimum requirement of 15% RNG content by volume in natural gas supply by 2030. BC’s gas utility, FortisBC, has offered residents and businesses the option to purchase RNG since 2010.

Over the past few years, ABAG POWER has attempted to identify opportunities to incorporate RNG into its purchase portfolio. To replace any portion of the program’s existing fossil-based

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purchases, RNG projects must be interconnected to Pacific Gas and Electric Company's (PG&E's) pipeline infrastructure.

Wastewater treatment plants and landfills are the municipally-owned facilities most likely to be producing biogas. There are thirteen active solid waste disposal sites and four sites not actively accepting waste within the San Francisco Bay Area. All have landfill gas collection systems installed; the collected gas is either controlled and flared or processed through energy recovery devices.

#### **Potential Opportunities**

In the coming months, staff intends to initiate communications with local municipal wastewater treatment plants and landfills to attempt to identify premises with expiring power purchase agreements (PPAs) or energy recovery systems that may be considering grid interconnection.

In September 2016, Governor Brown signed into law SB 1383 which, among other things, sets a target for reduction of methane emissions to 40% below 2013 levels by 2030, and requires the diversion of 75% (from 2014 levels) of organic waste from landfills by 2025. It is likely that the diversion of organic materials will create additional facilities (e.g., composting) that produce biogas.

#### **Issues:**

Consistent with prior years, the cost of RNG remains largely cost-prohibitive for residential and commercial applications. The current market price – about 10 times the cost of fossil-based gas – is driven by limited supply and competing uses within the vehicle fuel and electric generation sectors.

While California is a leader in many aspects of climate policy, it is not a leader in biomethane policy or production technologies. Other than the Low Carbon Fuel Standard, the state thus far has not embraced either an RNG feed-in tariff/subsidy program or increasing procurement targets similar to the Renewable Portfolio Standard in the electricity sector.

Additionally, there is no formal consensus on the ongoing role envisioned for California's natural gas grid. The lack of a coherent vision can be attributed to a confluence of factors, including

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climate objectives and regulations, public health and air quality, gas-fired electricity generation and associated electrical grid affordability and reliability (i.e. electrification and energy storage), PG&E's bankruptcy, the proliferation of Community Choice Aggregators, and others.

On January 16, 2020, the California Public Utilities Commission (CPUC) initiated a rulemaking proceeding seeking to, among other things, "implement a long-term planning strategy to manage the state's transition away from natural gas-fueled technologies to meet California's decarbonization goals." <sup>1</sup> The issues to be examined in this proceeding currently include identifying several "time horizons" to determine how much gas infrastructure is needed for reliability and safety needs; just and reasonable cost and rate allocation given expected declining usage; and, utility workforce considerations. The proceeding is scheduled to reach a Proposed Decision in August 2022. ABAG POWER intends to participate in the proceeding.

**Recommended Action:** None.

**Attachment:** Attachment 1: CleanBC Summary – Excerpt

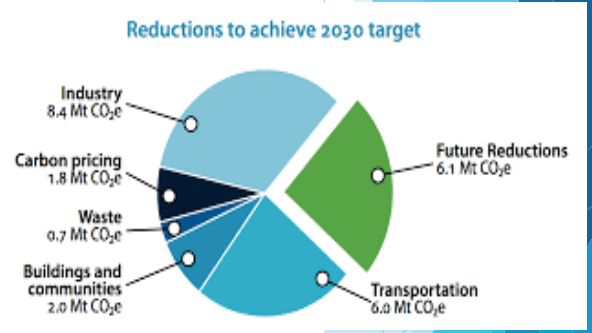
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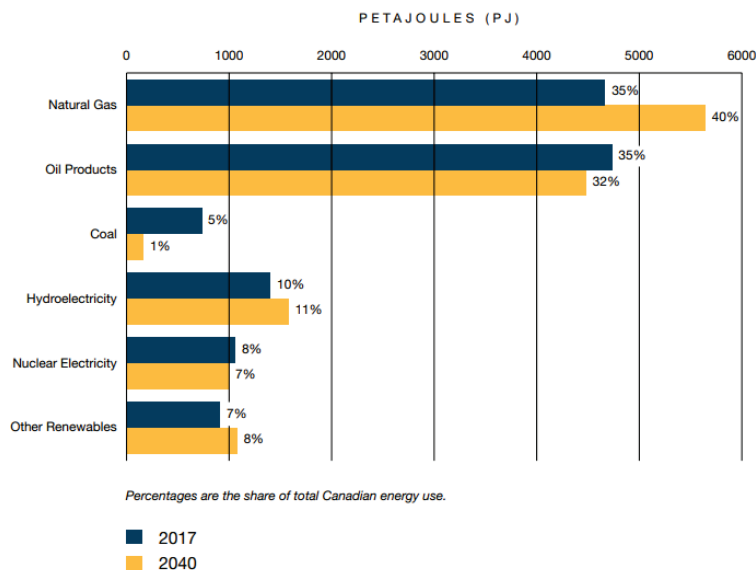
<sup>1</sup> <http://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M325/K641/325641802.PDF>

# CleanBC

- ▶ Legislated GHG reduction targets:
  - ▶ 40% by 2030, 60% by 2040, 80% by 2050
- ▶ 18.9 Mt GHG = 75% of the way to 2030. 6.1 Mt remaining
- ▶ Minimum 15% Renewable Gas by 2030
- ▶ Renew the BC Bioenergy Strategy
  - ▶ Build out the bioenergy and biofuels cluster
  - ▶ Create Centre of Excellence for Biofuels
- ▶ 95% organic waste diversion for agricultural, industrial, and municipal waste
  - ▶ systems in place to capture 75% of landfill gas
- ▶ Develop a BC Hydrogen Roadmap



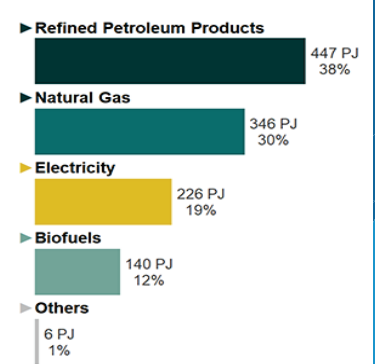
# Total Primary Energy Use in Canada by Fuel Type, 2017 vs 2040



- ▶ Natural gas's share of total energy use increases from 35% in 2017, to 40% in 2040, or an increase of 975 PJ.
- ▶ Source: Canada Energy Regulator, Canada's Energy Future 2019.

## BC's Energy: Opportunities & Challenges

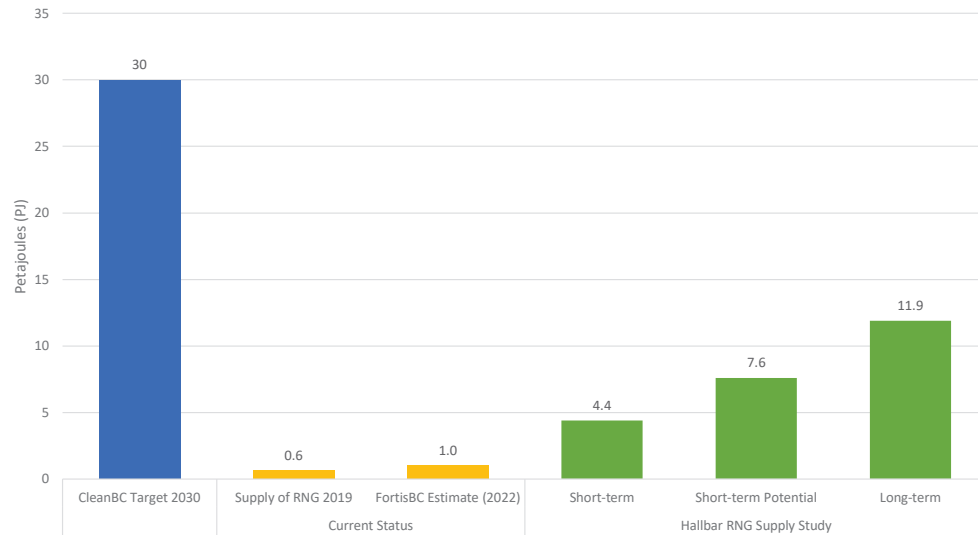
- ▶ 68% of end-use energy in BC is fossil fuel (30% natural gas / 38% petroleum)
  - ▶ Significant opportunity for decarbonization via clean gas
- ▶ BC has substantial natural gas reserves
- ▶ Over 98% of B.C.'s electricity is clean and/or renewable
  - ▶ Projected surplus into mid-2030s
- ▶ Electricity and natural gas are relatively inexpensive in BC
- ▶ Impacts on utility ratepayers is a key government consideration
- ▶ Technical and cost barriers relating to clean gas
- ▶ GGRR allows up to 5% RNG @ \$30/GJ



## BC Bioenergy Strategy - Mid 2020

- ▶ BC Bioenergy Network (BCBN)
  - ▶ Trusted Partnership
  - ▶ BCBN a key partner for implementing CleanBC bioenergy targets
  - ▶ Centre of Excellence for Biofuels
- ▶ Key components of the strategy:
  - ▶ organic waste into energy (agriculture, forestry and municipal organics);
  - ▶ expanding RNG production;
  - ▶ investing in new biocrude refining;
  - ▶ helping communities develop and deploy clean technologies;
  - ▶ investing in bioenergy technologies and companies.

## RNG Supply & Demand



## Under Consideration: GHG Reduction Requirement for Natural Gas

- ▶ 15% by volume  $\approx$  2.06Mt GHG  $\approx$  30PJ
- ▶ RNG supply constraints, cost, need to protect ratepayers
- ▶ Outcome-based approach to GHG reduction by gas utilities
- ▶ Reductions could be achieved through a combination of GHG emission reductions from:
  - ▶ clean gas blending
  - ▶ the utility's distribution/ operations
  - ▶ demand side management
- ▶ Examples: RNG/ Syngas, electrification, energy efficiency, hydrogen injection