

ANGVA2U Info 03/2019. 18th March 2019. (for ANGVA members only)

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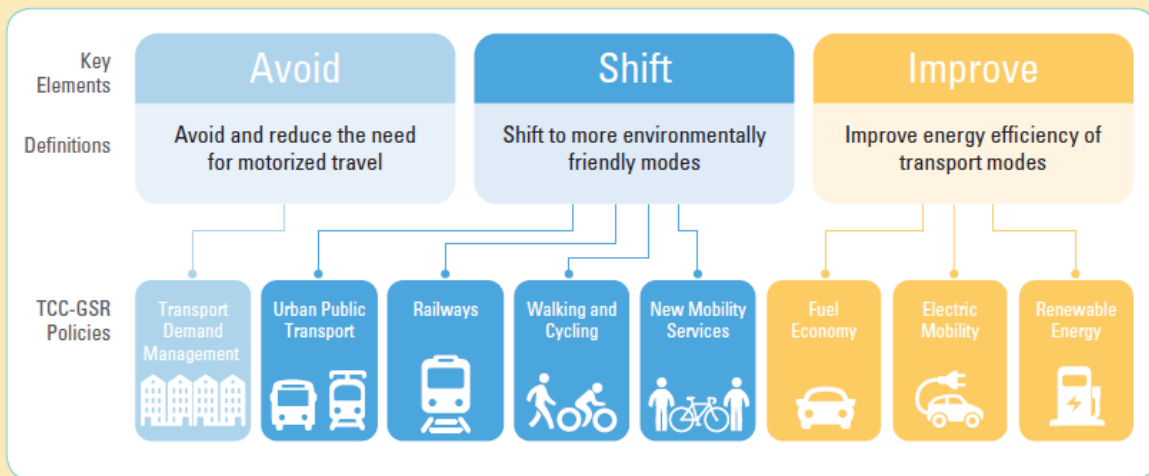
1.0 “Moving towards Low Carbon, Low Emissions, Next Generation Vehicles”

We have been warned by various organizations, governments, scientists, experts, and people that we need to urgently and significantly reduce emissions to achieve the 1.5 degree Celsius scenario (1.5DS) called for in the Paris Agreement to avoid potentially catastrophic climate impacts by mid-century (2050). Addressing climate change is one of the major global challenges of our time.

The transport sector is a major contributor of greenhouse gas (GHG) emissions; responsible for 23 % of global energy-related carbon dioxide (CO₂) emissions. Transport is the third largest source of CO₂ after power and industrial combustion. The rate of emissions from transport is increasing faster than any other sectors. Without rapid and ambitious mitigation action, transport emissions could more than double by 2050; thus any path to a 1.5DS must include low carbon transport as a central element. Yet only 10% of the (Intended) Nationally Determined Contributions (NDCs) include a transport CO₂ reduction target.

A 1.5DS pathway for the transport sector is possible using a mix of stringent policy actions to reduce/avoid the need for transport trips, encourage shifts toward more efficient transport modes, and improve vehicle efficiency through low-carbon technologies. See Figure 25 below. (SLoCat(2018). *Transport and Climate Change Global Status Report 2018*).

Figure 25: Avoid-Shift-Improve Framework



Tackling climate change mitigation and improving the probability of reaching a 1.5DS target will require more ambitious and comprehensive measures in low-carbon transport plans including a balanced set of strategies to: ‘Avoid’ unnecessary transport trips; ‘Shift’ existing trips to more efficient, low carbon modes; and ‘Improve’ the technologies of transport to reduce emissions.

Deployment of Low Carbon, Low Emissions, Next Generation Vehicles, is an option under the Improve measure to quickly reduce emissions from the transport sector while moving towards a future of carbon neutral transport sector. Low Carbon, Low Emissions, Next Generation Vehicles are taken here as

vehicles that operate using Natural Gas (CNG and LNG), BioCNG/Renewable Natural Gas (BioCNG and BioLNG), Electricity (HEV, PHEV, BEV), Hydrogen (FCEV), low carbon Drop-in fuels, and Electro fuels.

The market and infrastructure development, operational experiences, challenges, technologies, and future of these Low Emission, Low Carbon, Next Generation Vehicles, will be presented, discussed and exhibited at the 8th ANGVA Biennial International Conference & Exhibition (ANGVA 2019), 25th – 27th November 2019, Jakarta, Indonesia.

2.0 Selected News

2.1 United States of America

The fight is on: electrification vs. natural gas

Sarah Golden. Greenbiz.com Saturday, March 9, 2019



Shutterstock Budimir Jevtic .

An operator at a renewable natural gas processing plant.

On Feb. 28, two California energy companies — Southern California Gas (SoCalGas) and San Diego Gas & Electric (SDGE) — [filed an application \(PDF\)](#) with the California Public Utilities Commission to offer a new product to their customers: renewable natural gas (RNG).

The idea is the two companies will offer climate-conscious customers the option to pay extra each month to swap out fossil natural gas for RNG using what they call a "renewable natural gas tariff." Think [community choice aggregation](#), but not through a utility, and for gas, not electricity.

Questions about renewable natural gas?

There's already a lot of confusion about natural gas, not to mention renewable natural gas. To clarify:

- **What is renewable natural gas?**

RNG — sometimes referred to as biomethane or biomass — is the result of processing the gaseous product from matter, which can be used interchangeably with fossil natural gas. The gas can be collected from landfills, animal manure or wastewater treatment plants.

- **Is RNG better for the climate than fracked natural gas?**

RNG does something very cool: It diverts methane, an incredibly potent greenhouse gas, from entering the atmosphere and turns it into a usable energy source. California already has a law designed to capture [40 percent](#) of this methane by 2030 as part of its climate goals. California's waste streams are the state's [largest methane source \(PDF\)](#), and harvesting that gas means we get another bite of the apple before emitting GHGs.

- **Could RNG meet California's natural gas needs?**

Nope. Building experts see no way for SoCalGas and SDGE to meet natural gas demand through their proposed program. Analysis from [Redwood Energy](#) finds that even if California were to import all of the United States' RNG resources and factor in the effects of energy efficiency, it could deliver only about a third of the state's current gas demand.

SoCalGas and SDG&E write that there is enough RNG to meet California's 2030 climate goals (although not 2045's goal). But its analysis of the feasibility is based on a [California Air Resources Board report](#) that addresses transportation fuel, not home energy consumption.

Natural gas companies face a conundrum

Natural gas providers are in a tough spot: methane leaks during extraction, transportation and storage mean the climate impact from this sector is higher than initially thought. What's more, the infrastructure is expensive to maintain, needing massive safety upgrades and leak mitigation investments. Rising infrastructure costs are already leading to higher gas rates in California, where gas prices have increased three times faster than electric rates over the past five years, according to an [NRDC analysis \(automatic PDF download\)](#).

If infrastructure costs continue to rise, natural gas may appear increasingly less economical.

What the RNG tariff does, according to Panama Bartholomy, director of the Building Decarbonization Coalition, is delay the wind-down of the gas network. "It allows for the increased expansion and upgrade of lines, extending costs to consumers and communities," Bartholomy said via email. "Therefore, we'd pay down an even higher level of financing than if we start the wind-down now."

Electrification is putting on the squeeze

Meanwhile, a movement is gaining momentum: building electrification. In order for California to meet its climate goal, it must decarbonize the building sector, which accounts for 26 percent of statewide emissions. That means getting natural gas out of buildings — no small task with so many homes, business and appliances burning gas onsite.

Groups are working on how to decarbonize buildings. The Building Decarbonization Coalition recently released "[A Roadmap to Decarbonize California's Buildings](#)" and the Rocky Mountain Institute is working on the "[Economics of Electrifying Buildings](#)." California policy could help, such as SB 1477, which establishes an incentive program for electric appliances; or a [plan](#) approved in late February by the California Energy Commission that could encourage electric appliances over gas ones.

Gas interests are forming their own [coalition](#) — Californians for Balanced Energy Solutions — to defend natural gas, which formally will be announced in the coming weeks.

This sounds like a California thing. Why should I care?

Natural gas, once considered a bridge fuel to a cleaner future, is a [major contributor](#) to the carbon footprints of industry and states, and is on its way to becoming more prevalent. Natural gas distribution expenditures tripled between 2009 and 2017 (to [\\$14.9 billion](#) per year) and oil supermajors Chevron and Exxon are doubling down, [planning to increase](#) production by 80 percent by 2024.

California, the [second-highest](#) consumer of natural gas in the United States, is ground zero for the electrification-versus-gas war, and the battle fought here is a case study of the potential issues coming to states and companies across the nation.

Companies with climate goals have so many decisions to make, and the choices made now will shape the energy infrastructure to come. As a fuel source, RNG is well worth exploring, especially where electrification is hardest, such as with industry, flexible capacity and heavy-duty transportation.

With any technological innovation, the question I ask: Does this solution solve a problem or create a new one? In this case, it may be a little of both.

<https://www.greenbiz.com/article/fight-electrification-vs-natural-gas>

2.2 Finland

Wärtsilä to build bioLNG facility in Asker

by staff



Image courtesy of Wärtsilä

Finnish technology group Wärtsilä has been given the notice to proceed for a liquid biogas (bioLNG) plant to be built in Asker, Norway.

The contract for the plant was awarded in April 2018 by VEAS, a Norwegian wastewater treatment and biogas producing company, and the notice to proceed was signed in December 2018, Wärtsilä said in its statement.

The new facility will comprise a biogas upgrading and liquefaction plant. It will enable VEAS to produce biogas creating an alternative to fossil fuels and reducing CO₂ emissions.

The new bioLNG plant will be incorporated together with the company's existing biogas plant. The total bioLNG production capacity will be 20 tons per day.

The scope of supply for the bioLNG plant includes upgrading of the biogas, hot water production, liquefaction, storage and truck loading capability.

Wärtsilä is delivering the system on a fast-track basis, and the on-site installation is scheduled to be completed within a 14-month time-frame. The plant is expected to become in commercial operation during 2020.

https://www.lngworldnews.com/wartsila-to-build-biolng-facility-in-asker/?utm_source=email&utm_medium=email&utm_campaign=daily-update-lng-world-news-2019-03-14&uid=46966

2.3 Canada

Massive bus barn in north Calgary to house growing CNG-fuelled fleet

Meghan Potkins, Calgary Herald. March 13, 2019



New transit barn unveiled today in north-central Calgary, it will be the largest such facility in North America.

WES RAYMOND PHOTOGRAPHY / CALwp

A massive new storage and maintenance facility for transit buses fuelled by compressed natural gas (CNG) has officially opened in north-central Calgary.

The sprawling facility just west of the Deerfoot-Stoney Trial interchange arrives just in time, as the city begins transitioning its mostly diesel fleet to new natural gas-fuelled buses. The Stoney Transit Facility will house more than 470 40-foot buses, with on-site CNG and diesel-fuelling stations and maintenance bays.

Calgary has long needed more bus storage — the 44,300-square-metre facility will be the largest in North America — and with the shift from diesel to CNG, the city is hoping it will ultimately save more than \$4 million in fuel costs per year.

“It saves money for the city, it protects us from the price volatility of diesel because we can lock in long-term natural gas contracts (and) it supports Calgary industry and shows the world another use for Alberta natural gas, which is incredibly important,” Mayor Naheed Nenshi told reporters Tuesday.

“And it reduces greenhouse gas emissions both through encouraging use of transit and through converting diesel to natural gas.”

The \$174-million facility was designed and built through a public-private partnership with Plenary Infrastructure, which will maintain the facility for the next 30 years; funding was contributed by all three orders of government.

Following an initial order of [30 to 40 CNG-fuelled buses in 2018](#), the city has had to somewhat scale back its plan to purchase more CNG buses over the next four years due to budgetary constraints.

The city said buses will have to be used “past their optimum life” of 16 years and will incur additional maintenance costs, according to budget documents for 2019-22.

However, last week saw the province announce new funds to support the purchase of an additional 52 CNG buses in Calgary through the Alberta Community Transit Fund.

“This facility means more Calgarians will benefit from efficient, safe and environmentally friendly public transit, spending less time in traffic and easily getting to where they need to go,” Transportation Minister Brian Mason said in a statement Tuesday.

The city has carefully studied its options when it comes to replacing older model diesel buses and is currently looking at a mix of fuel sources to power transit in the future, including electricity.

The main goal is reducing costs and greenhouse gas emissions, Nenshi said.

“We have an agnostic strategy toward the greening of our fleet,” Nenshi said.

“In some instances, CNG makes a tonne of sense, particularly through the winter months. We’ve been testing it extensively. Electric buses probably need one more generation before they can become as reliable as CNG, but as we convert our fleet, electric and CNG will both be an important part of it.”

<https://calgaryherald.com/news/local-news/massive-stoney-trail-facility-to-house-calgarys-growing-cng-fuelled-bus-fleet>

2.4 Mexico

Michoacán plant’s nopal biogas will power half of municipality’s vehicles

Nopalimex's product is 40% cheaper than gasoline

Thursday, February 28, 2019



Nopalimex plant in Michoacán.

A new chapter in a decade-long history of a Michoacán business commenced yesterday in Zitácuaro when the first industrial plant in Mexico dedicated to obtaining biogas and generating electricity from nopal, or prickly pear cactus, began operations.

The Nopalimex plant is expected to produce three million liters of biogas every year, enough to meet 50% of the fuel needs of the vehicle fleet operated by the municipality of Zitácuaro.

The company says that a cubic meter of the biogas it produces is equivalent to a liter of gasoline, but is 40% cheaper.

While the main focus of the new plant will be to obtain biogas and electricity, some byproducts will include ethanol, nopal for human consumption, humus and nitrogen-rich water that can be used as a fertilizer.

Governor Silvano Aureoles Conejo said at the plant's opening ceremony that more municipalities and producers will be encouraged to participate in the innovative energy production initiative.

"I have been promoting this great idea, that we can create a green park from Cuitzeo Lake to Lazaro Cardenas where we can grow nopal and install several biogas plants along the Siglo XXI highway, boosting the use of this resource," he said.

The governor's intention is to have all public transportation vehicles in the state convert to biogas engines, a process that cost between 25,000 and 30,000 pesos (US \$1,300 and 1,500) per vehicle.

Source: El Financiero (sp)

<https://mexiconewsdaily.com/news/biogas-will-power-half-of-municipalitys-vehicles/>

3.0 Events

- i. 20th China International NGVS and Gas Station Equipment Exhibition 2019 + 2nd China International Natural Gas Vehicle and Ship Development Forum 2019. China International Exhibition Center (New Venue), Beijing, China. 16th – 18th May 2019. Endorsed by ANGVA.
- ii. ANGVA 2019, The 8th ANGVA International Biennial Conference & Exhibition. Balai Kartini Exhibition & Convention Center, Jakarta, Indonesia. 25th – 27th Nov 2019. Hosted by Indonesia CNG Association (APCNGI) and Asia Pacific Natural Gas Vehicles Association (ANGVA). Organized by All Events Group, Singapore (AEG). For more information please contact angva@angva.org or aznita@angva.org

Joins us at the 8th Asia Pacific Natural Gas Vehicles Association
Biennial International Conference & Exhibition (ANGVA 2019)

ANGVA 2019
8th ANGVA International Biennial
Conference & Exhibition 2019
Jakarta, Indonesia

Theme : Moving towards Low Carbon, Low Emissions, Next
Generation Vehicles

Date : 25th – 27th Nov 2019

Venue : Balai Kartini Exhibition & Convention Center,
Jakarta, Indonesia

Website : www.angva2019.com

Hosts : Indonesian CNG Association (APCNGI)
Asia Pacific Natural Gas Vehicles Association (ANGVA)

Organizer : All Events Group, Singapore (AEG)

For more information please email us at : angva@angva.org ; aznita@angva.org

4.0 End

Any comments and suggestions on the topics and information covered and to be covered in future are most welcome. Please send your comments and suggestions to Lee Giok Seng at email: leegs@angva.org