



# FUTURE FOR DOMINICAN REPUBLIC AS LNG HUB IN THE CARIBBEAN

LNG gc AMERICAS  
June 2<sup>nd</sup> 2017  
Houston, Texas  
by  
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**CCC**

CONSORCIO COMERCIAL DEL CARIBE S.A.

## AGENDA

**1./ DOMINICAN REPUBLIC A SUITABLE GEOGRAPHICAL POSITION**

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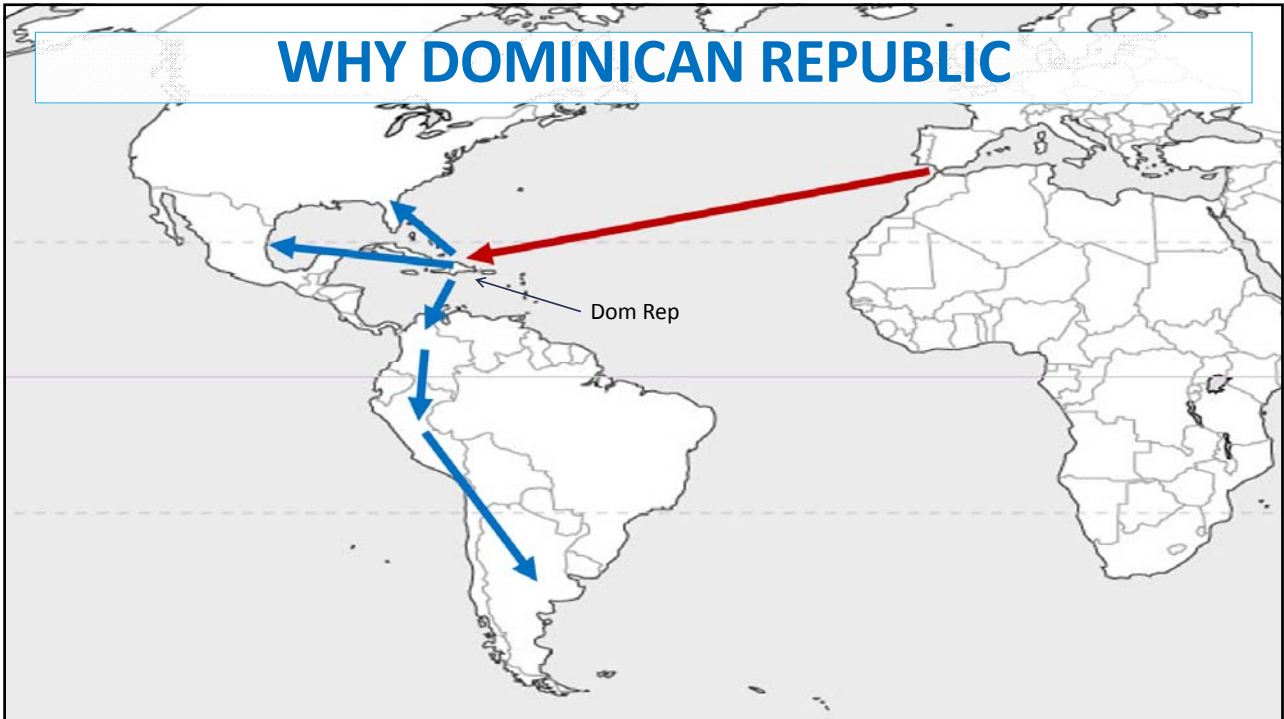
**2./ DRIVERS OF LNG IN THE CARIBBEAN REGION**

**3./ LNG IN DOMINICAN REPUBLIC**

**4./ THE FIRST LNG HUB IN THE CARIBBEAN**

**5./ CONCLUSIONS**

# WHY DOMINICAN REPUBLIC



# LNG DRIVERS IN THE CARIBBEAN



## CARIBBEAN LNG DRIVERS

- **LNG SUPPLY** USA becoming major and close source of LNG
- **SMALL LNG** Technology is improving for a segmented Caribbean
- **LNG LARGE PLAYERS** getting involved in the region
- **TOURISM** 29 Million visitors a year, 94% from USA, Europe and Canada
- **GOVERNMENTS PRIORITIZING LNG** Jamaica, Curacao and Barbados

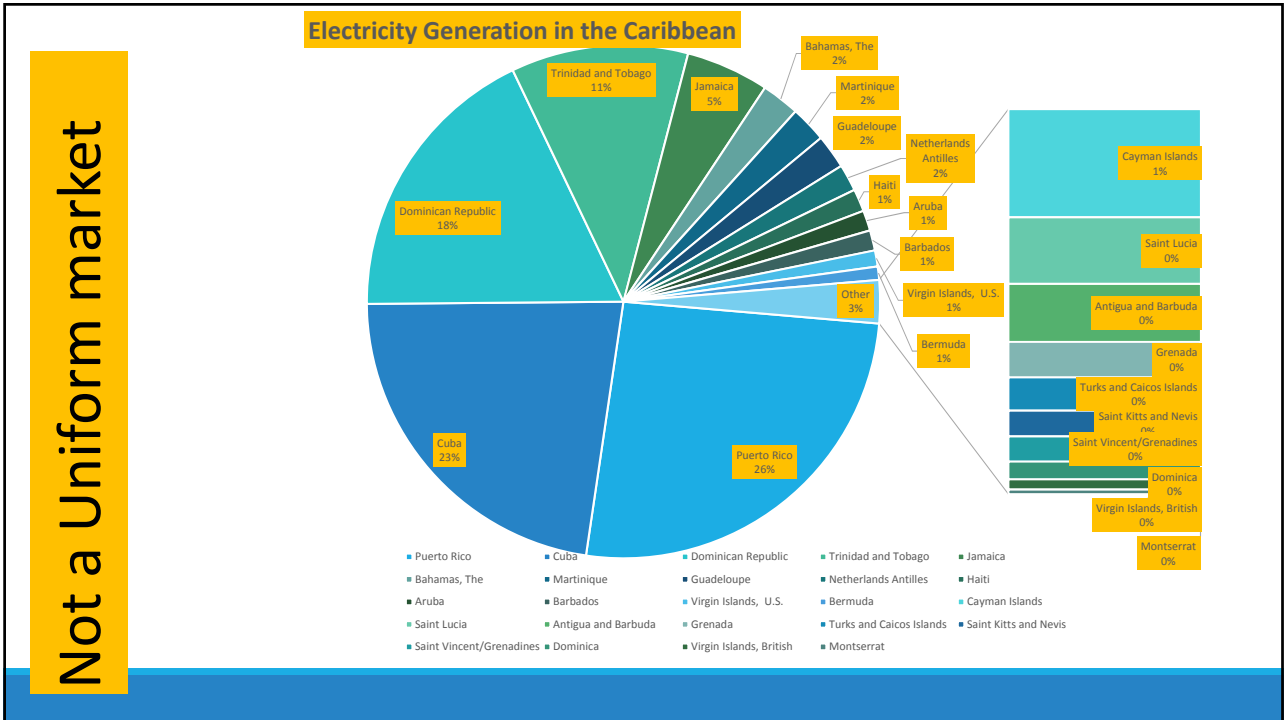
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## LNG AVAILABILITY OF US GAS



\* Not including Altamira, Mexico, which is not expected to import material quantities of LNG due to increased pipe importation from the US

| Total Electricity Net Generation (GWH) in the Caribbean |          |          |          |          |          |                   |
|---|----------|----------|----------|----------|----------|-------------------|
|   | 2008     | 2009     | 2010     | 2011     | 2012     |                   |
| Bermuda   | 685.0    | 693.7    | 686.4    | 674.0    | 647.0    |                   |
| Antigua and Barbuda                                     | 271.0    | 308.0    | 306.0    | 310.0    | 315.0    |                   |
| Aruba   | 859.0    | 899.0    | 984.0    | 980.0    | 990.0    |                   |
| Bahamas, The  | 1,777.0  | 1,595.0  | 1,644.0  | 1,590.0  | 1,845.0  |                   |
| Barbados  | 1,011.0  | 1,023.0  | 1,037.0  | 1,002.0  | 981.0    | Produces Nat. Gas |
| Cayman Islands  | 578.0    | 597.4    | 593.5    | 594.0    | 587.0    |                   |
| Cuba  | 16,669.4 | 16,720.1 | 16,403.7 | 16,744.1 | 17,366.0 |                   |
| Dominica  | 83.0     | 88.5     | 94.5     | 97.5     | 96.5     |                   |
| Dominican Republic                                      | 11,676.0 | 11,558.5 | 12,296.5 | 13,086.0 | 13,911.0 | Import Nat. Gas   |
| Grenada   | 189.8    | 195.4    | 201.4    | 196.0    | 193.0    |                   |
| Guadeloupe  | 1,638.0  | 1,638.0  | 1,640.0  | 1,645.0  | 1,650.0  |                   |
| Haiti   | 465.7    | 688.2    | 560.4    | 893.0    | 1,089.0  |                   |
| Jamaica   | 3,970.0  | 4,066.0  | 4,016.0  | 4,104.0  | 4,041.0  | Import Nat. Gas   |
| Martinique  | 1,517.0  | 1,558.0  | 1,632.0  | 1,697.0  | 1,762.0  |                   |
| Montserrat  | 22.0     | 22.0     | 22.0     | 24.0     | 25.0     |                   |
| Netherlands Antilles                                    | 1,197.5  | 1,280.1  | 1,304.0  | 1,306.0  | 1,313.0  |                   |
| Puerto Rico   | 20,921.0 | 20,709.0 | 20,888.0 | 20,015.0 | 20,026.0 | Import Nat. Gas   |
| Saint Kitts and Nevis                                   | 131.0    | 133.0    | 135.0    | 138.0    | 140.0    |                   |
| Saint Lucia   | 331.2    | 341.2    | 358.0    | 362.0    | 361.7    |                   |
| Saint Vincent/Grenadines                                | 132.0    | 132.0    | 136.0    | 135.0    | 137.0    |                   |
| Trinidad and Tobago                                     | 7,268.0  | 7,374.0  | 7,996.0  | 8,266.0  | 8,604.0  | Produces LNG      |
| Turks and Caicos Islands                                | 186.0    | 196.0    | 191.0    | 185.0    | 180.0    |                   |
| Virgin Islands, U.S.                                    | 843.6    | 872.0    | 825.0    | 794.0    | 777.9    |                   |
| Virgin Islands, British                                 | 47.0     | 49.0     | 51.0     | 53.0     | 55.0     |                   |

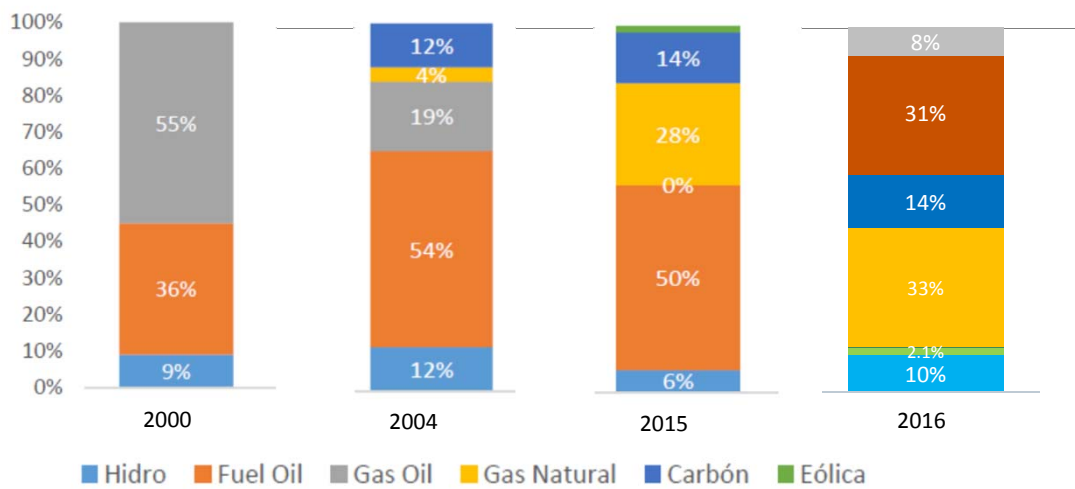




# DOMINICAN REPUBLIC THE FIRST LNG HUB



## DOMINICAN REPUBLIC POWER GENERATION FUEL MATRIX



## LNG COMSUPTION PER SECTORS IN DOMINICAN REPUBLIC

| DEMAND OF LNG 2010-2016  |                   |                   |                   |                   |                   |                   |                   |             |
|--------------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------|
| (MMBTU / Year)           |                   |                   |                   |                   |                   |                   |                   |             |
| Sector                   | 2010              | 2011              | 2012              | 2013              | 2014              | 2015              | 2016              | %           |
| Transportation           | 25,026            | 223,468           | 721,675           | 1,024,403         | 1,293,350         | 1,000,984         | 887,386           | 2%          |
| Generation (AES)         | 30,845,770        | 32,362,770        | 32,665,049        | 31,862,759        | 34,384,904        | 33,836,774        | 33,958,174        | 81%         |
| Generation third parties | 29,723            | 199,278           | 5,241,857         | 7,488,681         | 4,284,418         | 5,412,341         | 3,096,717         | 7%          |
| Industries               | 1,240,220         | 4,037,050         | 5,167,856         | 4,285,122         | 4,105,889         | 4,096,101         | 4,093,377         | 10%         |
| Exports to the Caribbean |                   |                   |                   |                   |                   |                   | 1,764             | 0%          |
| <b>TOTAL</b>             | <b>32,140,740</b> | <b>36,822,567</b> | <b>43,796,437</b> | <b>44,660,964</b> | <b>44,068,561</b> | <b>44,346,199</b> | <b>42,037,418</b> | <b>100%</b> |

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## LNG IMPORTS IN TO DOMINICAN REPUBLIC

2007: 0.43 MMTPA ----> Trinidad y Tobago (0.37); Nigeria (0.06)

2008: 0.35 MMTPA ----> Trinidad y Tobago (0.35)

2009: 0.40 MMTPA ----> Trinidad y Tobago (0.40)

2010: 0.63 MMTPA ----> Trinidad y Tobago (0.63)

2011: 0.69 MMTPA ----> Trinidad y Tobago (0.69)

2012: 0.87 MMTPA ----> Trinidad y Tobago (0.70); Qatar (0.17)

2013: 0.84 MMTPA ----> Trinidad y Tobago (0.84)

2014: 0.82 MMTPA ----> Trinidad y Tobago (0.77); Qatar (0.06)

2015: 0.87 MMTPA ----> Trinidad y Tobago (0.87)

**2018:-----> Louisiana, USA**

**Nota:** MMTPA = Million Metric Tons per Annual de GNL

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## AES LNG TERMINAL IN DOMINICAN REP

- 160,000 m3 capacity
- Built in 2003
- Supplies 639 MW
- 15,593 vehicles
- 52 industries
- Exports
- ISO tanks
- Vessels 10,000 M3 and up

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## DOM REP LNG DISTRIBUTION HUB



## ISO TANKS LOADED

- 2 loading bays capacity 68m<sup>3</sup>/h
- 5,000 trucks loaded a year
- Serving 15,000 vehicles



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## SMALL VESSELS

- \$9M infrastructure reconfiguration: AES Andres has completed the jetty modifications and added additional pumps to be capable of loading small vessels ranging in size from 10,000m<sup>3</sup> and up.



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# ENGIE AND AES JOINT STRENGTHS

December 2016

**ENGIE and AES Andres, a subsidiary of The AES Corporation, have agreed to enter into a binding joint marketing agreement for liquefied natural gas (LNG), effective immediately for a period of up to 12 years. The partnership will combine ENGIE and AES' strengths to foster growth in LNG and natural gas sales in the Caribbean.**

ENGIE and AES Andres will jointly market 0.7 million tonnes per annum (mtpa) of LNG. The objective is to provide a cleaner and more cost-effective alternative to oil-fueled power generation, while satisfying a growing need for natural gas in the region. The agreement will pave the way to supply industrial customers and develop small scale demand.

Under the agreement, ENGIE will manage its commitment to deliver up to 0.7 mtpa from its diversified LNG portfolio, primarily via its supply from the Cameron gas liquefaction project in the U.S., expected to come on line in 2018. AES Andres will provide access to its regasification asset in the Dominican Republic, which has an annual capacity of approximately 1.5 mtpa.

This partnership further strengthens the two groups' relationship following the signing of a supply agreement earlier this year between ENGIE and Gas Natural Atlántico, an affiliate of AES in Colón Panama, under which ENGIE will provide up to 0.4 mtpa of LNG at Panama's Costa Norte LNG terminal beginning in 2018.

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## DELIVER LNG TO BARBADOS FROM DR

## AGREEMENT TO

MAY 2017

The energy group AES Dominicana has **signed an agreement to supply liquefied natural gas (LNG) to the Barbados National Oil Company Limited ("BNOCL), from its AES Andres LNG terminal in the Dominican Republic,** according to Edwin De los Santos, president of AES Dominicana.

De los Santos said the agreement "represents an important milestone for the country's positioning as the Caribbean's most geographically strategic distribution center toward the rest of the greater Caribbean area, and aligned with the public-private alliance growth strategy that should exist to achieve successful businesses, especially in matters of energy."

The LNG will be loaded at the LNG truck loading facility and transported via ISO containers, said George Nemeth, Director of LNG Marketing for AES Dominicana.

The agreement between AES Dominicana and BNOCL is the first term agreement to be executed by AES Dominicana with a country neighbor. In addition to distributing LNG via ISO containers, AES will also transport LNG via small bulk carriers following the successful modifications at the AES Andres LNG terminal in January 2017.

At the beginning of this year, AES Dominicana completed construction of the new AES Andres Marine Facility, with an investment of US\$9 million, which consisted in adapting the existing LNG reception terminal into an export terminal for ships as small as 10,000 cubic meters.

For smaller scale customers, AES will load LNG into ISO tanks at the liquefied natural gas truck terminal so that fuel can be delivered by container ships to neighboring countries. AES has performed more than 35,000 small scale cryogenic loadings without a single safety incident since it began operations seven years ago.



AES Andres Natural Gas Terminal

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## CONCLUSIONS

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### LNG WILL BECOME LEADING FUEL IN THE CARIBBEAN

- 1/ Developed countries tourism are forcing clean fuels
- 2/ USA becoming a major and close LNG source
- 3/ Small scale LNG technology is advancing
- 4/ Large influential LNG players getting involved
- 5/ Local governments are prioritizing LNG as clean fuel.
- 6/ Dom Rep location and infrastructure favours as LNG hub
- 7/ Developments of LNG will offer much opportunities

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# Thanks

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**CONSORCIO COMERCIAL DEL CARIBE S.A.**

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