entsog

european network
of transmission system operators
for gas

Brussels – 7 Dec 2017

# Indigenous Supplies

## TYNDP 2018

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**System Development Advisor**

Image Courtesy of Thyssengas

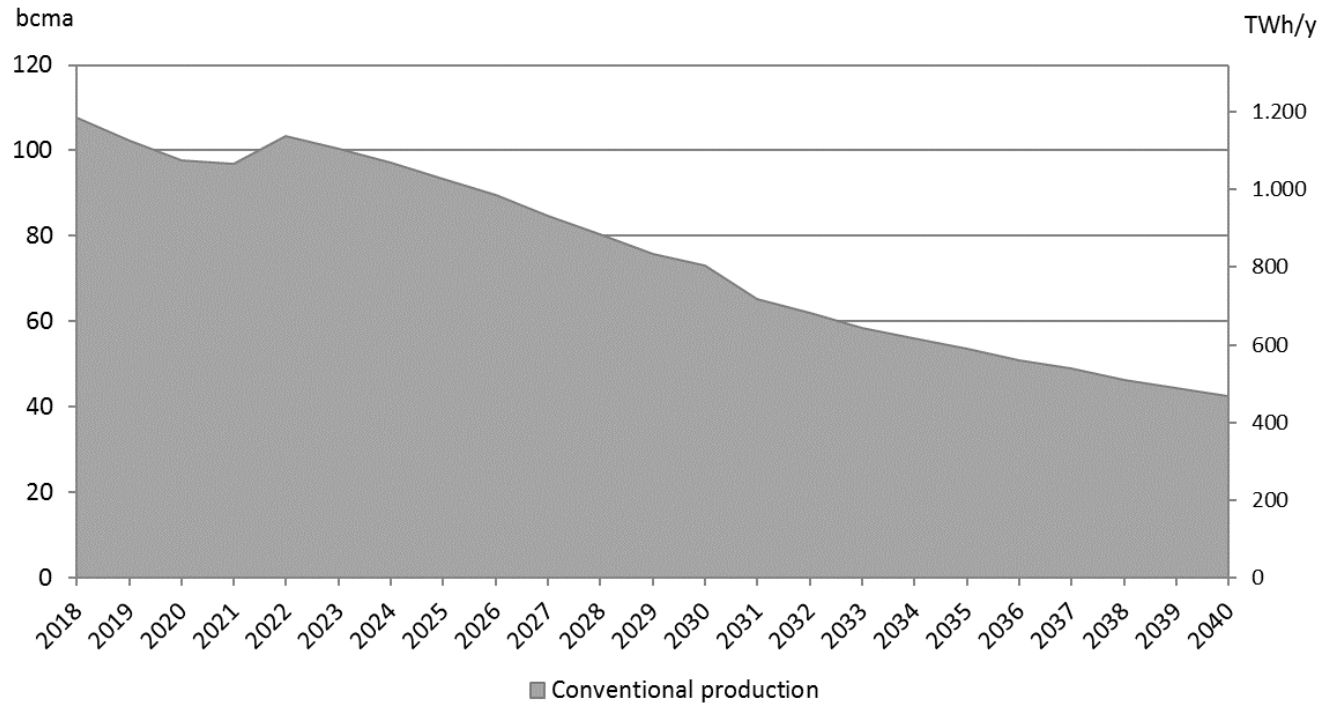
# Introduction to Indigenous Production

- **Conventional production**
  - **TSO data** for existing production
  - Inclusion of new (Non-FID) production (Black Sea) and potential new sources (Cyprus)
- **Unconventional production**
  - Not part of the storylines and confirmed by **TSOs** no shale gas is foreseen for the assessment
- **Renewable Gases**
  - **Biomethane** use of **TSO data** (in line with scenarios storylines)
  - **Power-to-gas** Top-down Methodology
- **Current developments in view of Final Scenario Report**
  - **Biomethane** Top-down Methodology for specific countries based on EBA Green Gas Grids Report
  - Qualitative analysis of **biogas** off-grid potential

# National Production Country Level

- National Production (TWh/y)

| COUNTRY | 2020 | 2025 | 2030 | 2040 |
|---|---|---|---|---|
| AT | 9,3 | 9,3 | 9,3 | 9,3 |
| BG | 6,1 | 15,3 | 15,7 | 15,7 |
| CY * | 0,0 | 116,8 | 116,8 | 116,8 |
| CZ | 1,0 | 0,6 | 0,6 | 0,6 |
| DE | 60,9 | 36,5 | 23,6 | 9,9 |
| DK | 46,9 | 27,8 | 12,2 | 1,4 |
| HR | 10,1 | 5,8 | 0,9 | 0,0 |
| HU | 6,5 | 4,6 | 4,4 | 3,9 |
| IE | 20,9 | 15,9 | 7,5 | 0,0 |
| IT | 59,0 | 46,5 | 36,6 | 22,7 |
| NL | 414,3 | 345,7 | 307,8 | 179,1 |
| PL | 27,7 | 27,7 | 27,7 | 27,7 |
| RO | 76,8 | 48,3 | 32,0 | 15,0 |
| RO * | 23,6 | 93,7 | 62,9 | 23,1 |
| SK | 0,7 | 0,1 | 0,0 | 0,0 |
| UK | 338,2 | 233,7 | 145,7 | 41,2 |
| Total | 1.102,1 | 1.028,4 | 803,9 | 466,4 |

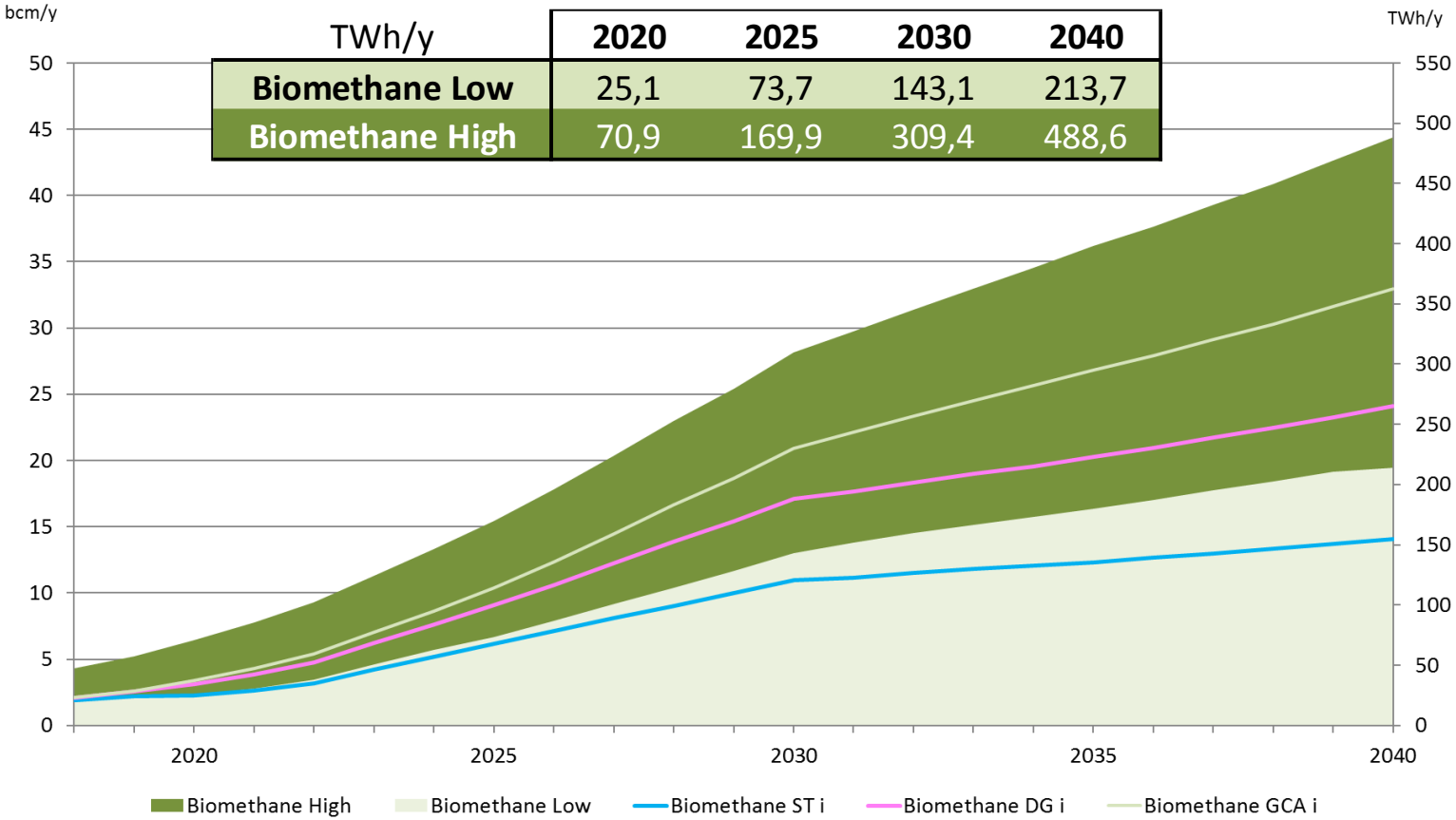



*Projected national production declining trend has been permanently revised downwards during the last years*

# Biomethane Grids Injection

- Biomethane data collection plus Top-Down methodology based on EBA (GGG report)
- Biomethane covers injection at DSO and TSO levels

| TWh/y | 2020 | 2025 | 2030 | 2040 |
|---|---|---|---|---|
| **Biomethane Low** | 25,1 | 73,7 | 143,1 | 213,7 |
| **Biomethane High** | 70,9 | 169,9 | 309,4 | 488,6 |



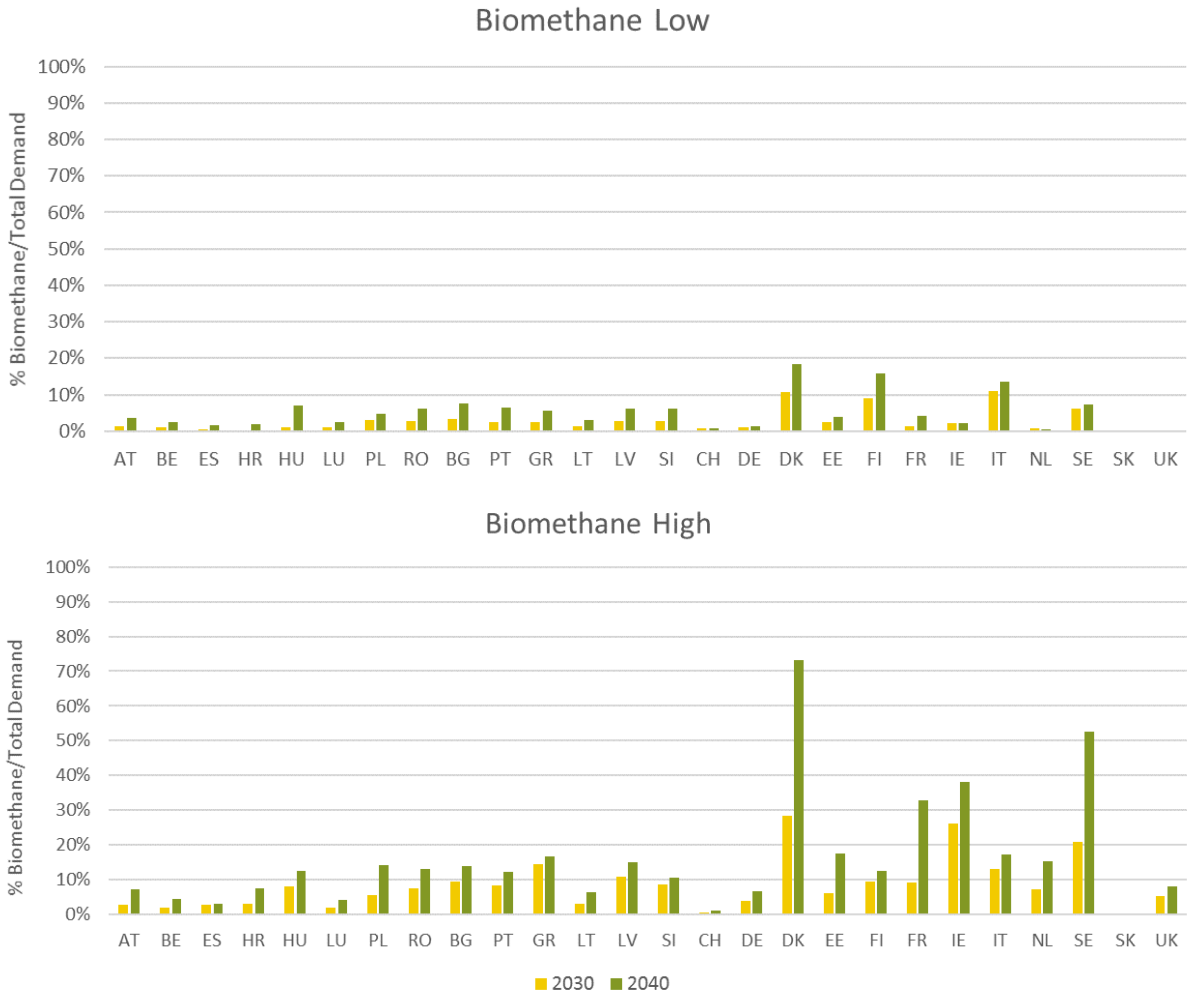

From Scenarios Draft Report

# Biomethane Country Level

- Biomethane / Total Demand (%)

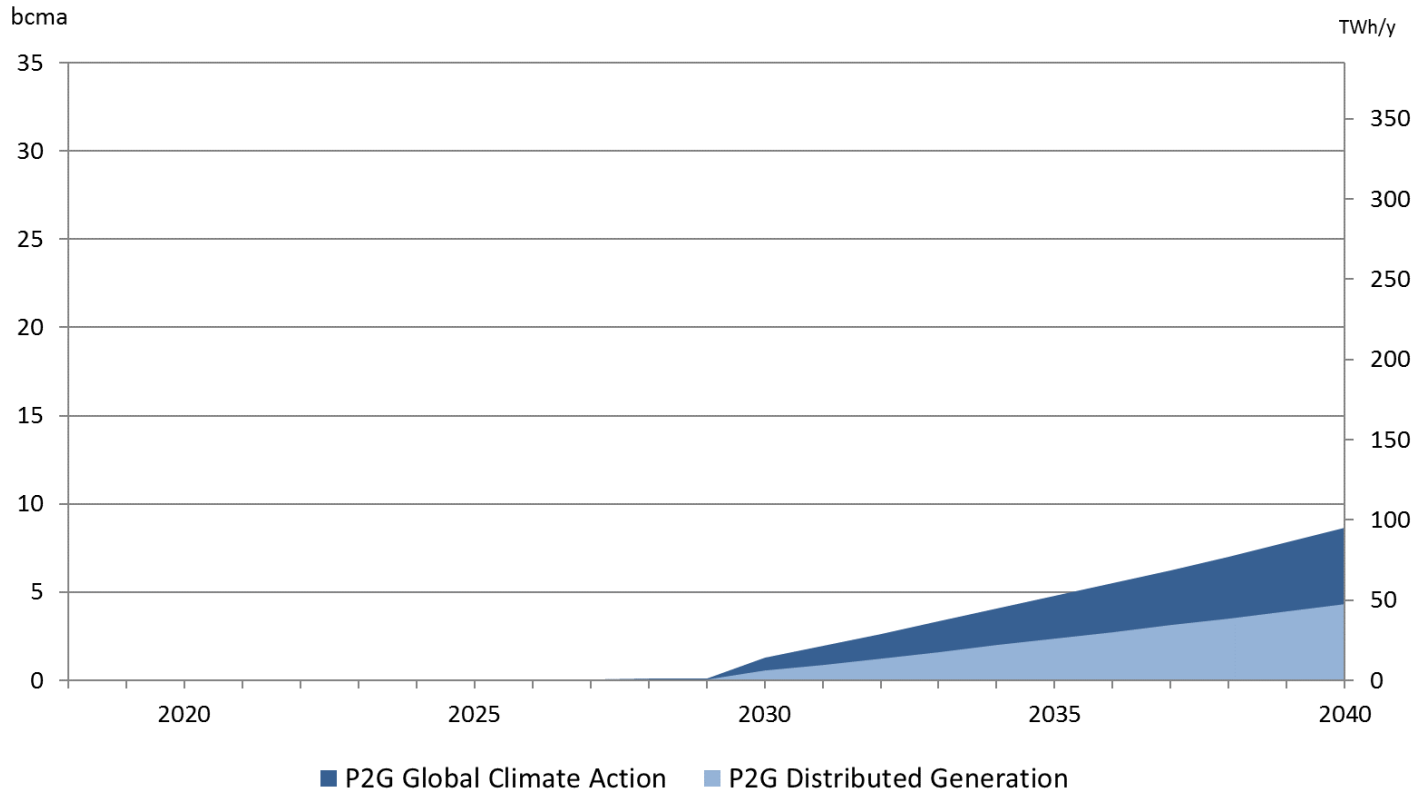
| BioM Low | 2030 | 2040 |
|---|---|---|
| AT | 1% | 4% |
| BE | 1% | 2% |
| BG | 3% | 7% |
| CH | 1% | 1% |
| DE | 1% | 1% |
| DEg | 1% | 1% |
| DEn | 1% | 2% |
| DK | 11% | 18% |
| EE | 2% | 4% |
| ES | 1% | 2% |
| FI | 9% | 16% |
| FR | 1% | 4% |
| FRn | 1% | 3% |
| FRs | 2% | 7% |
| FRt | 4% | 6% |
| GR | 2% | 6% |
| HR | 0% | 2% |
| HU | 1% | 7% |
| IE | 2% | 2% |
| IT | 11% | 14% |
| LT | 1% | 3% |
| LU | 1% | 3% |
| LV | 3% | 6% |
| NL | 1% | 1% |
| PL | 3% | 5% |
| PT | 3% | 6% |
| RO | 3% | 6% |
| SE | 6% | 7% |
| SI | 3% | 6% |
| SK | 0% | 0% |
| UK | 0% | 0% |

| BioM High | 2030 | 2040 |
|---|---|---|
| AT | 3% | 7% |
| BE | 2% | 4% |
| BG | 9% | 14% |
| CH | 1% | 1% |
| DE | 4% | 7% |
| DEg | 4% | 6% |
| DEn | 4% | 7% |
| DK | 28% | 73% |
| EE | 6% | 17% |
| ES | 3% | 3% |
| FI | 9% | 13% |
| FR | 9% | 33% |
| FRn | 5% | 20% |
| FRs | 14% | 52% |
| FRt | 31% | 85% |
| GR | 14% | 17% |
| HR | 3% | 7% |
| HU | 8% | 13% |
| IE | 26% | 38% |
| IT | 13% | 17% |
| LT | 3% | 6% |
| LU | 2% | 4% |
| LV | 11% | 15% |
| NL | 7% | 15% |
| PL | 5% | 14% |
| PT | 8% | 12% |
| RO | 7% | 13% |
| SE | 21% | 53% |
| SI | 9% | 11% |
| SK | 0% | 0% |
| UK | 5% | 8% |



# Power-to-gas Country levels

- Power-to-gas (TWh/y) based on Solar and Wind expected capacities in 2030 – 2040
- Specific studies point to higher potential, to be further investigated in TYNDP 2020



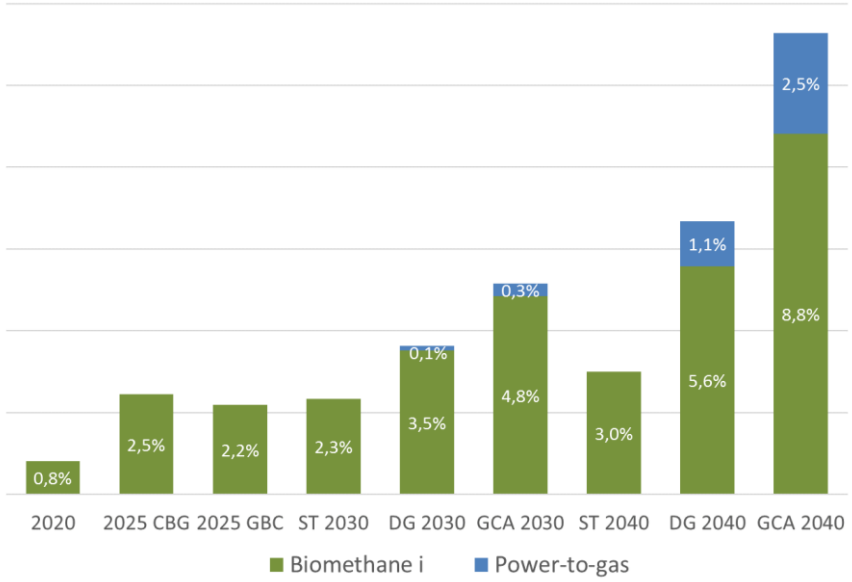

| GCA | 2030 | 2040 |
|---|---|---|
| AT | 0,3 | 1,0 |
| BE | 0,4 | 3,3 |
| BG | 0,2 | 0,4 |
| CH | 0,0 | 1 |
| CZ | 0,1 | 0,6 |
| DE | 4,1 | 22,5 |
| DK | 0,1 | 1,3 |
| EE | 0,0 | 0,7 |
| ES | 1,8 | 11,5 |
| FI | 0,1 | 1,3 |
| FR | 1,4 | 11,3 |
| UK | 1,4 | 7,7 |
| GR | 0,4 | 3,8 |
| HR | 0,1 | 0,3 |
| HU | 0,1 | 0,5 |
| IE | 0,1 | 0,9 |
| IT | 1,4 | 7,7 |
| LT | 0,0 | 0,7 |
| LU | 0,0 | 0,1 |
| LV | 0,0 | 0,1 |
| NL | 0,4 | 6,5 |
| PL | 0,4 | 2,3 |
| PT | 0,2 | 2,6 |
| RO | 0,3 | 3,9 |
| SE | 0,4 | 2,2 |
| SI | 0,1 | 0,2 |
| SK | 0,0 | 0,2 |
| Total | 13,9 | 95,1 |

| DG | 2030 | 2040 |
|---|---|---|
| AT | 0,1 | 0,9 |
| BE | 0,1 | 1,2 |
| BG | 0,0 | 0,4 |
| CH | 0,1 | 1 |
| CZ | 0,1 | 0,7 |
| DE | 1,4 | 9,4 |
| DK | 0,1 | 1,0 |
| EE | 0,0 | 0,2 |
| ES | 0,7 | 4,3 |
| FI | 0,0 | 0,6 |
| FR | 0,7 | 5,7 |
| UK | 0,6 | 4,9 |
| GR | 0,1 | 1,5 |
| HR | 0,0 | 0,4 |
| HU | 0,1 | 0,5 |
| IE | 0,1 | 0,6 |
| IT | 0,5 | 5,6 |
| LT | 0,0 | 0,3 |
| LU | 0,0 | 0,0 |
| LV | 0,0 | 0,2 |
| NL | 0,3 | 1,5 |
| PL | 0,3 | 3,3 |
| PT | 0,1 | 0,9 |
| RO | 0,1 | 1,2 |
| SE | 0,1 | 1,0 |
| SI | 0,0 | 0,2 |
| SK | 0,0 | 0,3 |
| TOTAL | 5,9 | 47,8 |

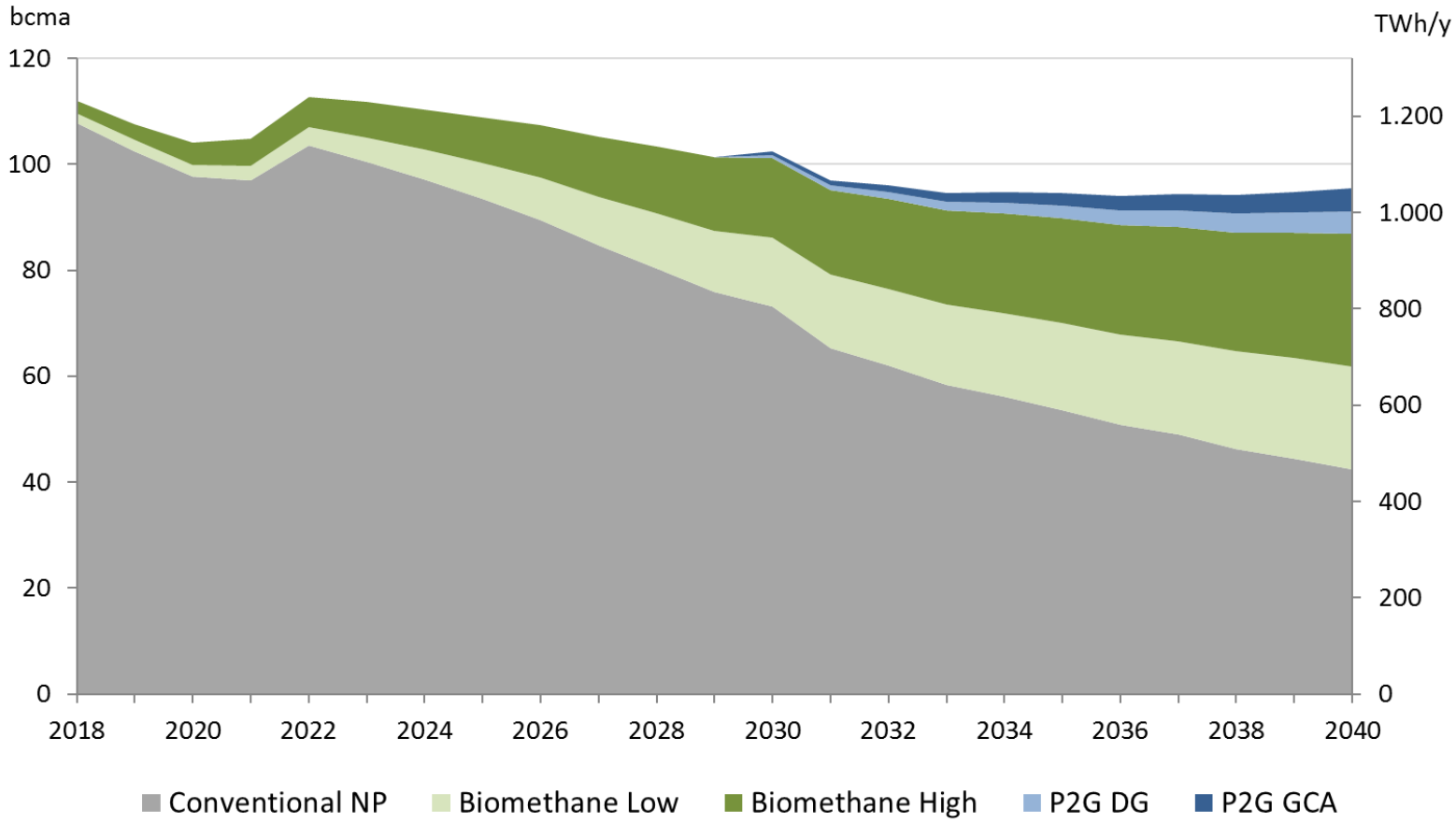
# Indigenous Production Scenarios

- Declining trend expected even in the best case scenario

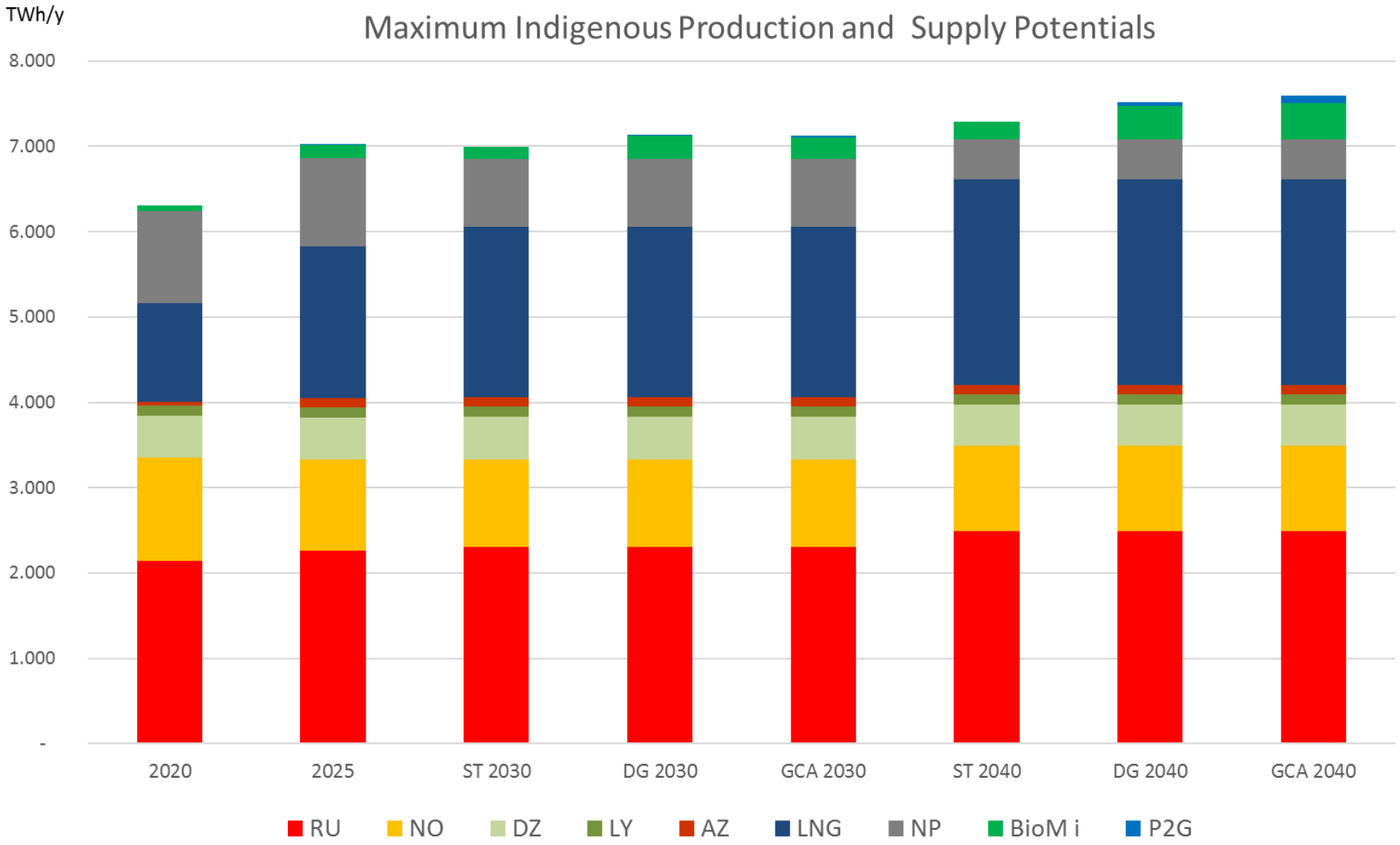
% Green Gases over total demand from Draft Scenario Report




* Scenario Report (to be updated)

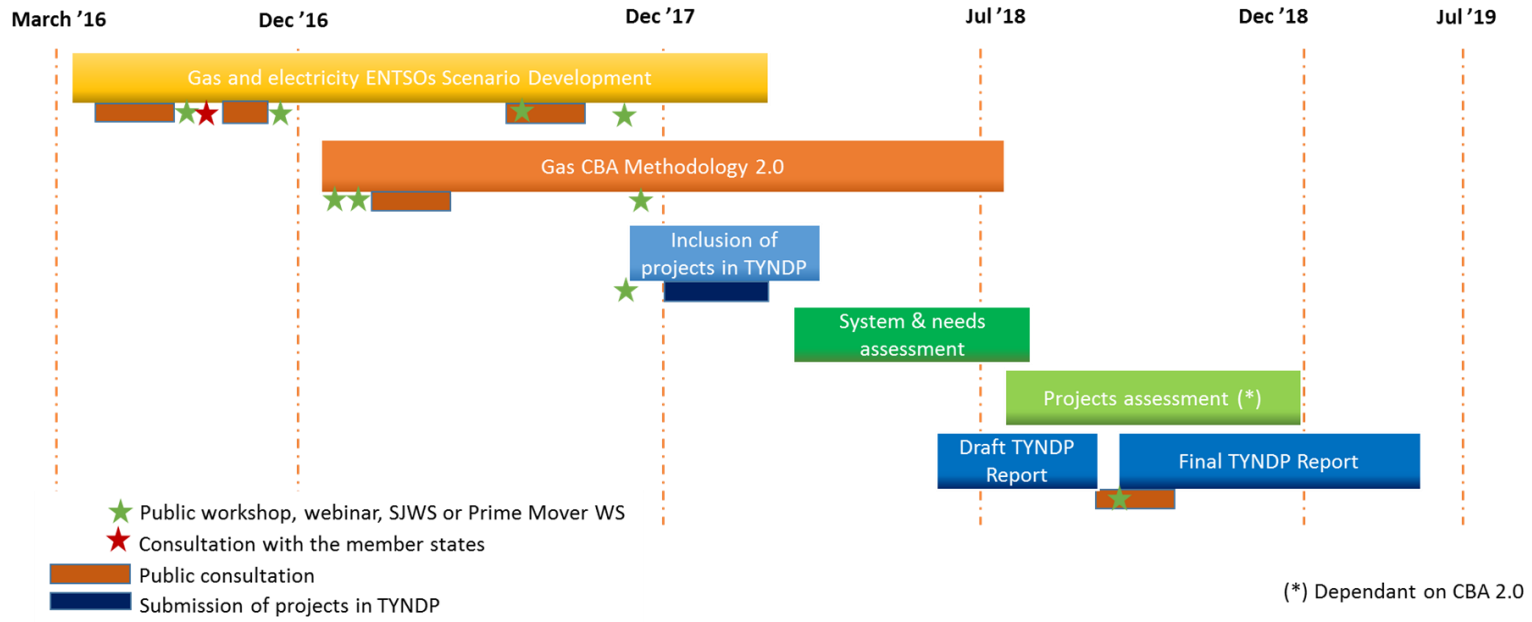


# Indigenous Production and Supply Potentials



# Next Steps

- Project Collection coming soon: 31st January to 28th February 2018
- Finalised Scenario Report March 2018
- Modelling SJWS spring 2018



# Thank You for Your Attention

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