

Natural Gas Development Framework

Update and Technical Briefing

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PURPOSE OF BRIEFING

Update on:

- Announcement of a new framework for natural gas development
- Status of ongoing engagement with LNG Canada
 - In preparation for their upcoming meeting of joint venture partners
 - In preparation for their subsequent Final Investment Decision
 - Provisional B.C. commitments to industry competitiveness, subject to positive Final Investment Decision

OUTLINE OF TECHNICAL BRIEFING

- I. Background
- II. New Government's Position on LNG
- III. LNG Canada Project
- IV. Economic Impacts
- V. B.C. Climate Plan
- VI. B.C. Provisional Commitments

I. Background

BACKGROUND

- Previous government's LNG aspirations were overly optimistic
 - 20 projects
 - Very large estimates of future government revenues

BACKGROUND

- Optimistic revenue forecasts reflected in extraordinary measures that LNG proponents were expected to pay
 - LNG electricity price greater than standard industrial rate
 - LNG income tax on top of standard corporate income tax
 - LNG plants not treated as manufacturing facilities with respect to PST

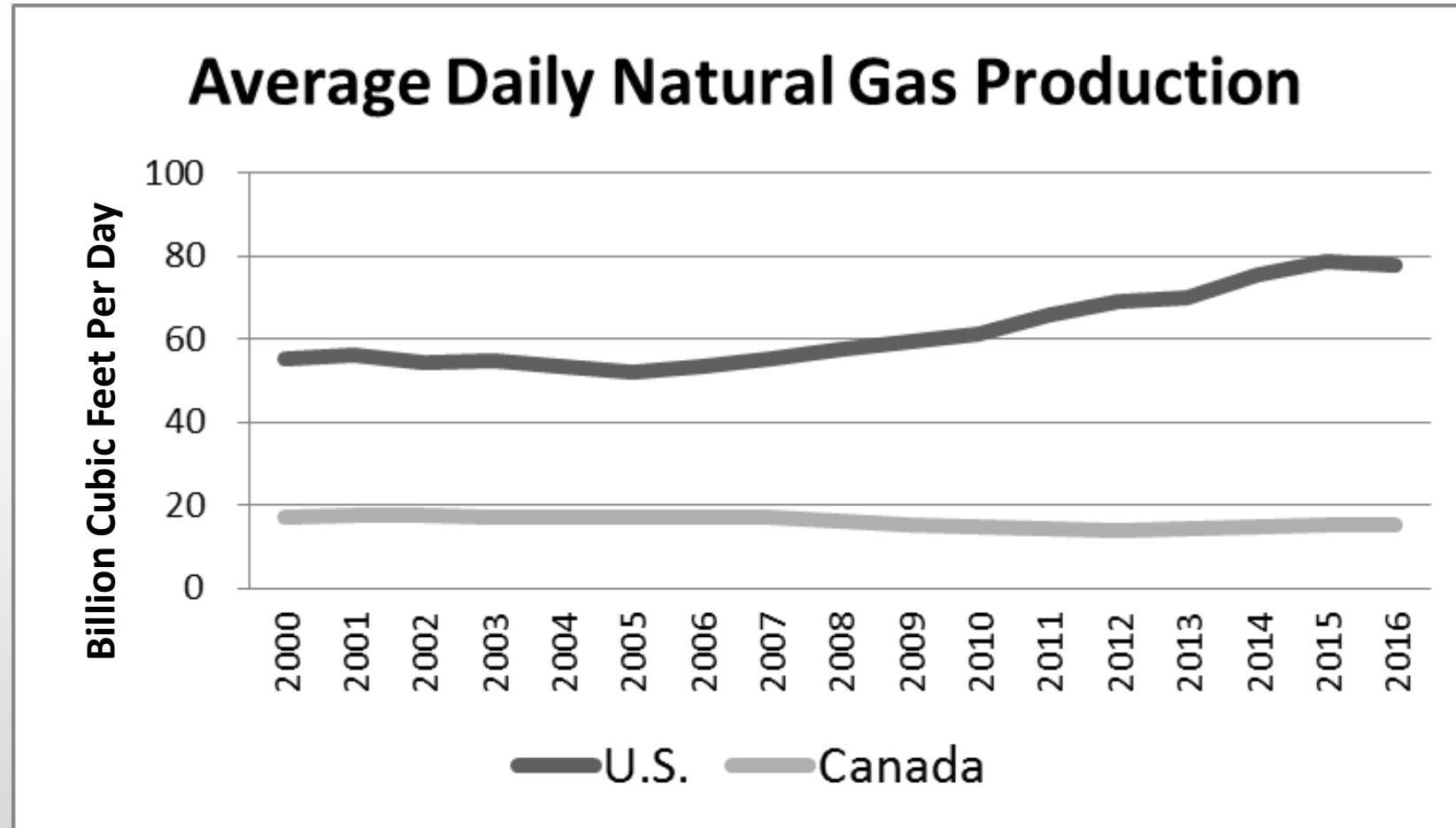
BACKGROUND

- Market evidence of this over-optimism is clear
 - No large LNG plants operating
 - No Final Investment Decision made to start building an LNG plant
 - 5 proponents for plants have cancelled plans

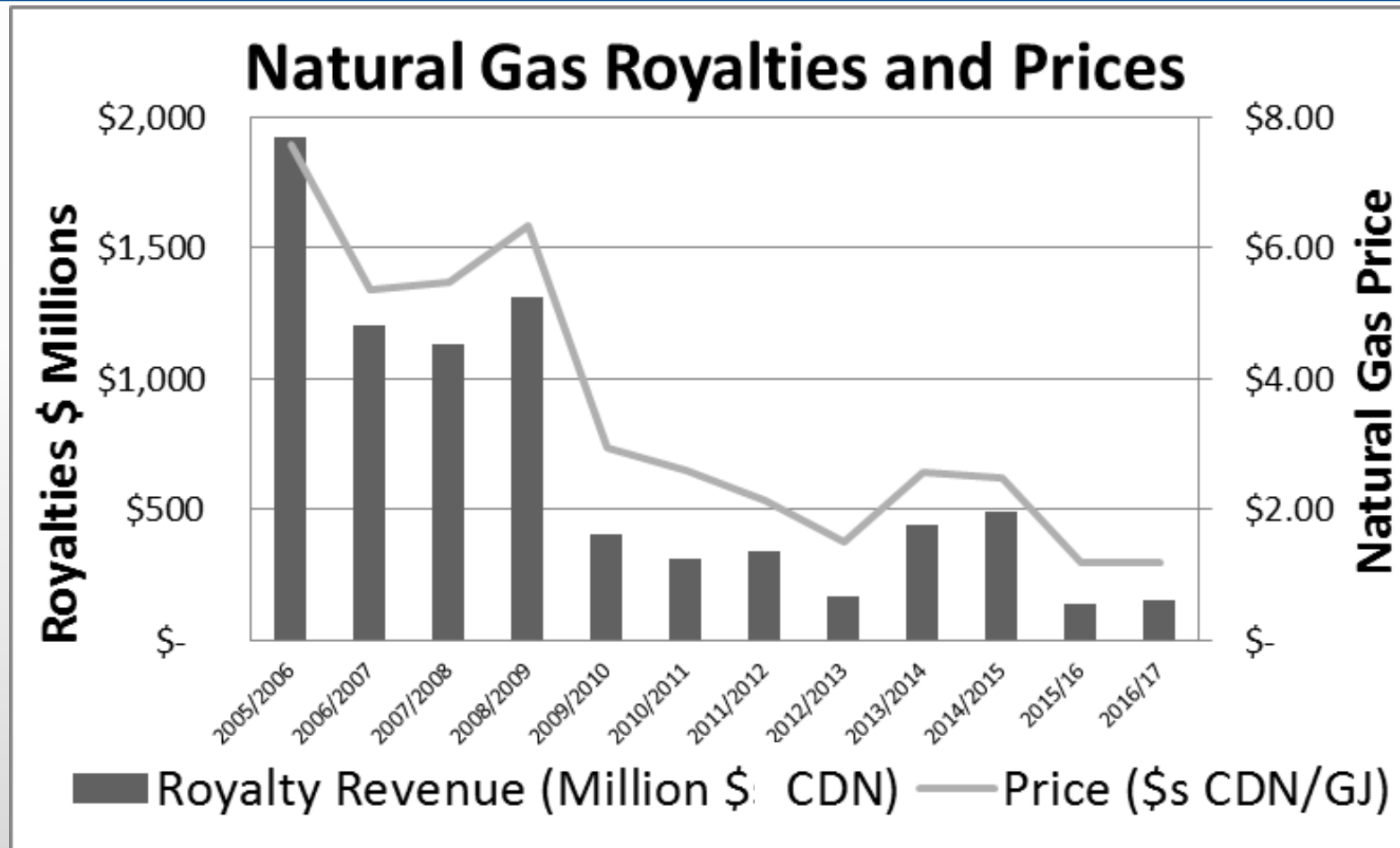
BACKGROUND

- To be fair, there was a rationale for pursuing LNG based on the relative economics of natural gas sold into the North American market versus the Asia market

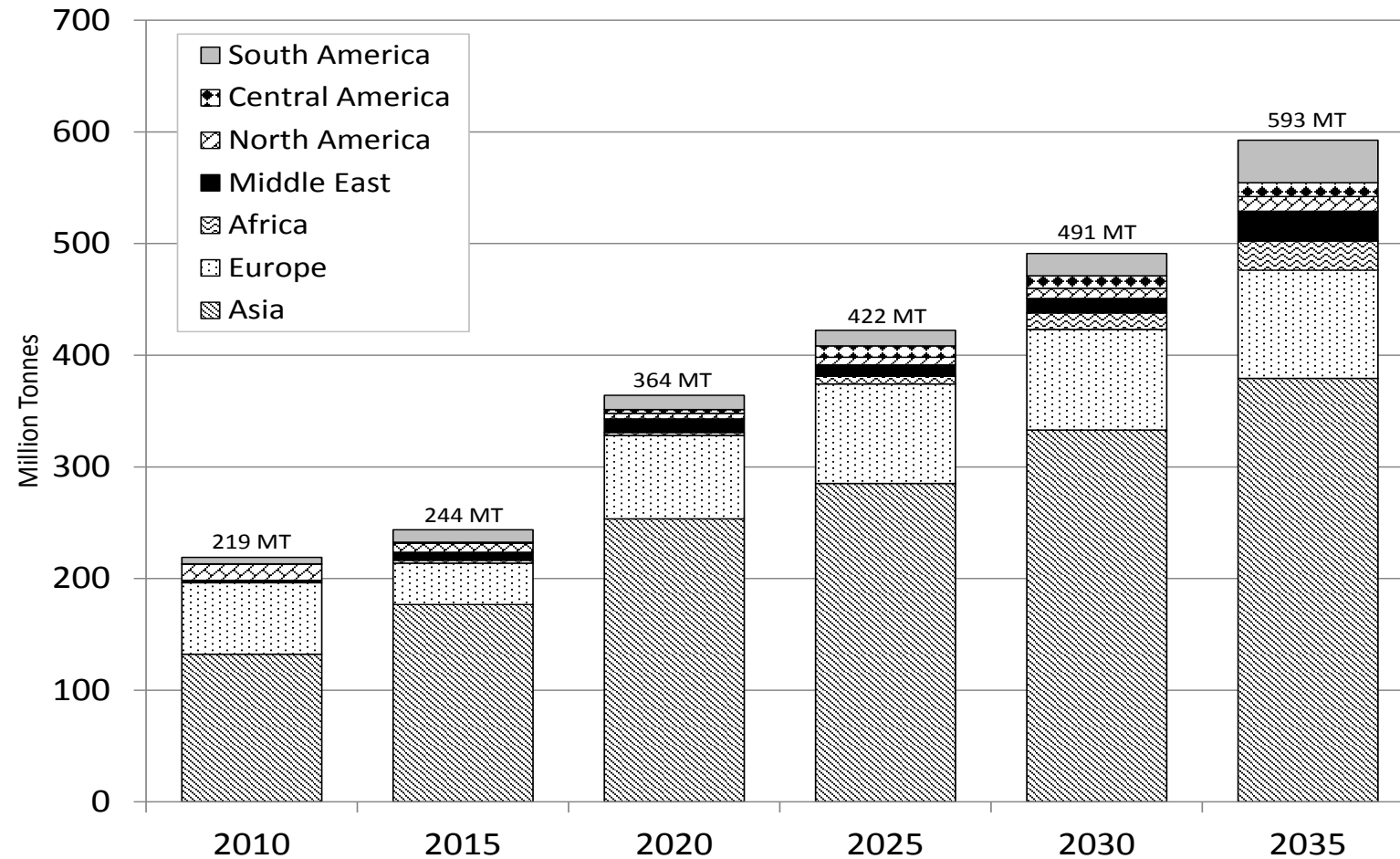
NORTH AMERICAN PRODUCTION



IMPACT ON NATURAL GAS PRICES AND B.C. GOVERNMENT REVENUES



PROJECTED LNG DEMAND GROWTH



Source: Wood Mackenzie LNG Tool (2018 Q1)

II. New Government's Position on LNG

NEW GOVERNMENT APPROACH TO LNG

- Following the 2017 election, the new government asked the Ministries of Energy, Environment and Finance to develop a realistic approach to LNG that could
 - Be accommodated within B.C.'s climate plan
 - Fit B.C.'s commitment to reconciliation with Indigenous Peoples
 - Establish cost-competitive conditions for the industry
 - Maximize financial benefits to B.C. through major investment, job creation and government revenues

CONDITIONS FOR LNG SUPPORT

Cabinet equipped the ministries with four conditions for any LNG development, establishing that any proposals must:

1. Provide a fair return for access to our public resources
2. Include express guarantees of jobs and training opportunities in B.C.
3. Respect and make partners of B.C. First Nations
4. Protect our air, land, water, including support for climate solutions

SUSTAINABLE SHARED PROSPERITY PARADIGM

- Cabinet asked the ministries to approach this analysis recognizing that economic development, climate action and reconciliation are **parallel and mutually dependent** priorities
- This approach acknowledges that
 - The resources to support reconciliation must come from economic growth
 - The resources to advance climate action must come from economic growth
 - Reconciliation is fundamental to growing B.C.'s economy
 - Economic growth has to fit within a low-carbon industrial strategy that enables B.C. to meet carbon goals

III. LNG Canada Project

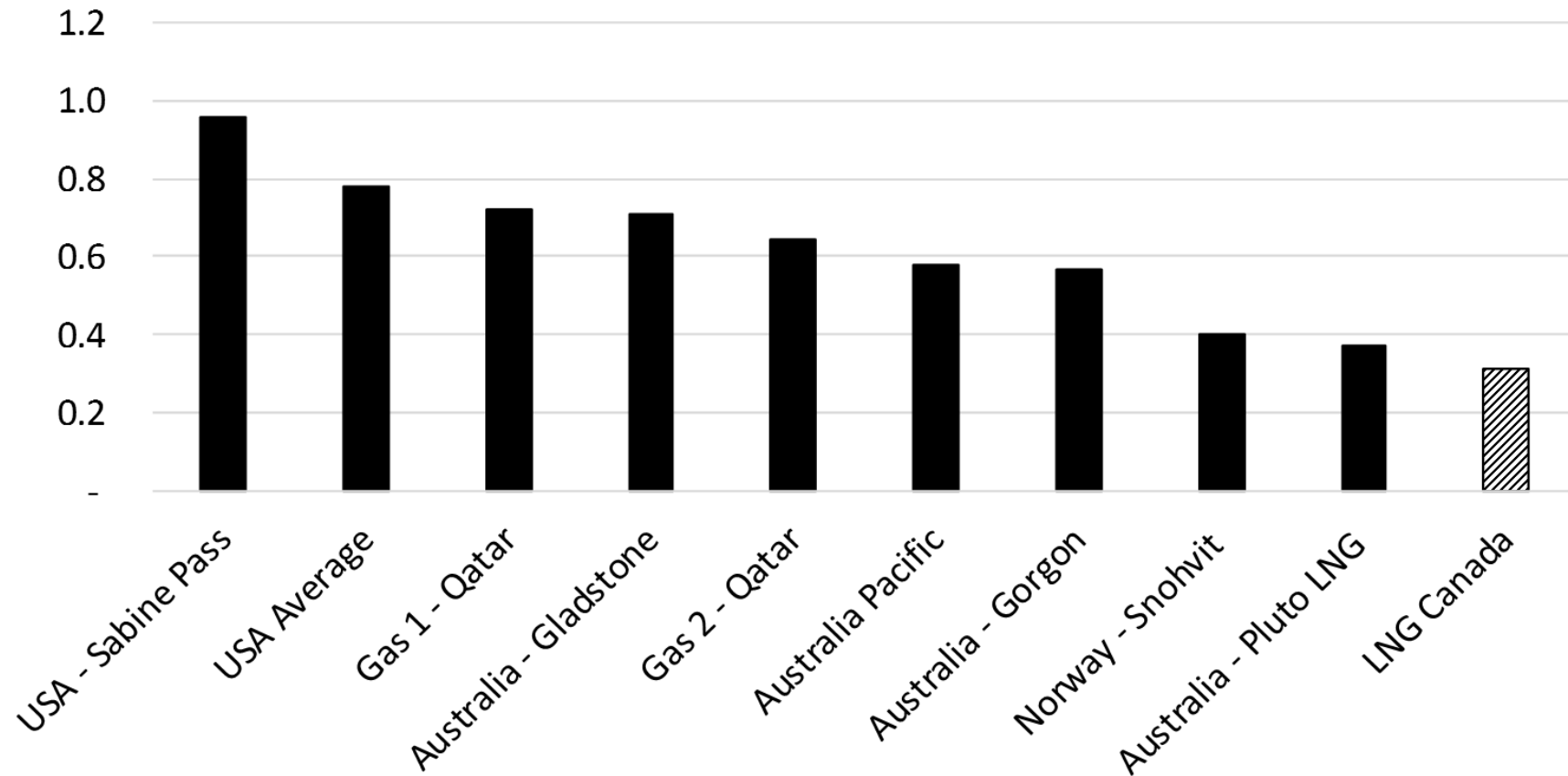
LNG CANADA PROJECT

- LNG Canada is a joint venture of Shell Canada (50%) with PetroChina, KOGAS and Mitsubishi
- The LNG Canada project includes
 - Investment in Northeast B.C. gas fields
 - Coastal GasLink Natural Gas Pipeline to Kitimat
 - Terminal at Kitimat
 - Ships for transport to Asia
- Project has received the support of most – but not all - area First Nations
- Would be the least GHG-intensive large LNG facility in the world

LNG GREENHOUSE GAS EMISSIONS INTENSITY

Global Emissions Intensity Comparison

Emissions Intensity
(tonnes of CO₂e emissions
per tonne of LNG produced)



STATUS AND TIMING

- LNG Canada is proceeding to Final Investment Decision
 - Meets with partners next week
 - Final Investment Decision anticipated in 2018
- A decision to proceed would trigger \$40 billion in investment
- Cost competitiveness is a key factor in making the investment decision
 - B.C. LNG is competing against LNG projects on the U.S. Gulf Coast

IV. Economic Impacts

LNG CANADA ECONOMIC IMPACTS

The project would:

- Provide significant net government revenue over the next 40+ years
- Provide significant economic benefits for First Nations from Northeast to Kitimat
- Provide good jobs and economic activity in a part of the province that has faced economic challenges
- Be the single biggest capital project in B.C. history
- Support rural economic development
 - LNG Canada expenditures in communities along the alignment already exceed \$100 million

DIRECT BC REVENUE POTENTIAL

- The Ministries of Finance and Energy have estimated that the project will generate \$22 billion in direct government revenue over the next 40 years
 - Significantly more if “multiplier” effects are taken into account

JOBS AND TRAINING

- Construction employment peaks at 10,000 in 2021
- LNG Canada has agreed to place priority on local, then B.C. hiring
- Target of 25% apprenticeships
- LNG Canada will follow best practices to maximize First Nations participation
- Ongoing direct operational employment (2024-2063) of 950 FTEs
- Construction and operational employment is expected to be primarily high-wage jobs

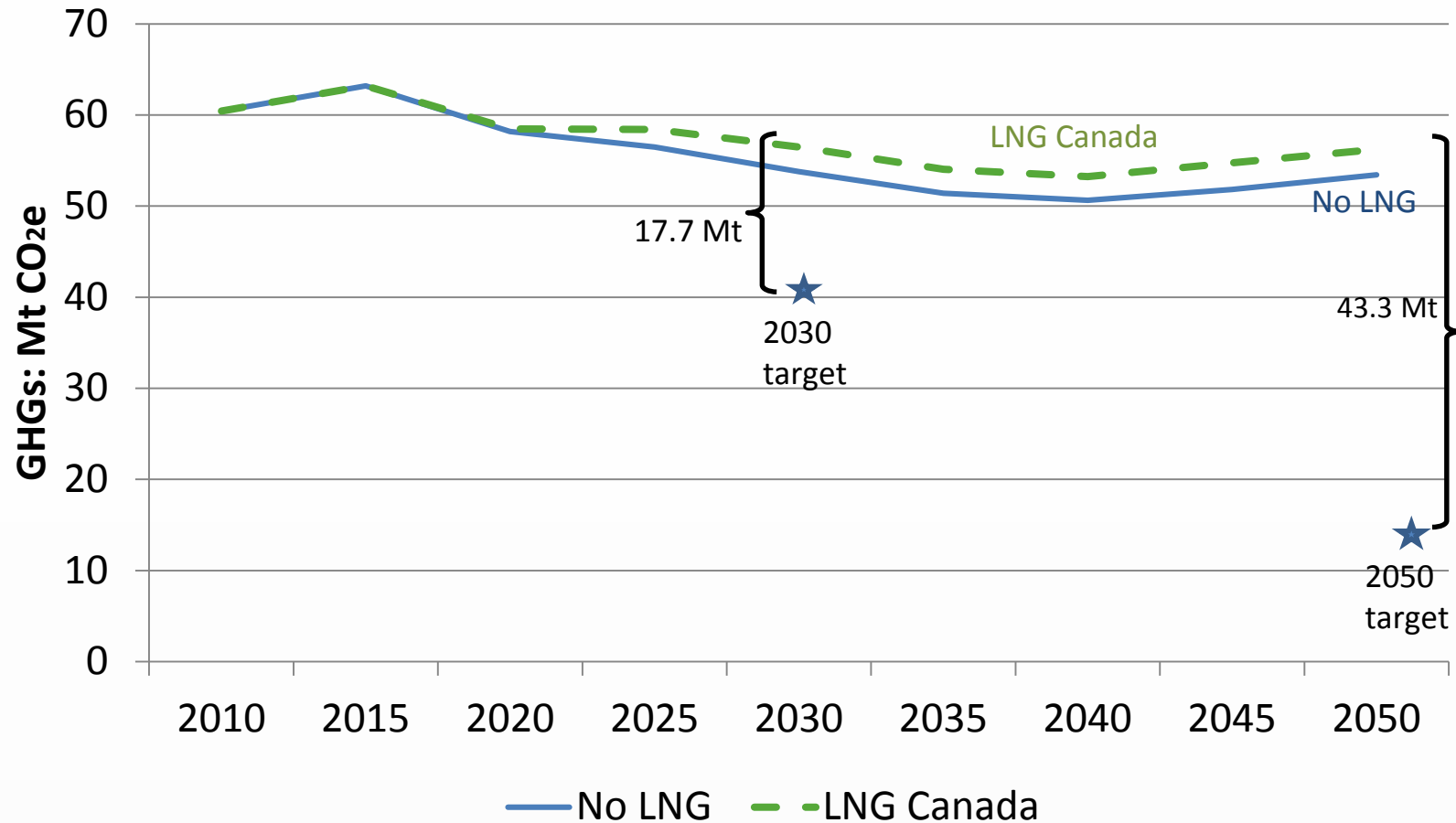
V. Climate Action Plan

CLIMATE ACTION PLAN

- Government is firmly committed to meeting climate goals
- Ministry of Environment is developing a Climate Action Plan
 - Including advice from Climate Solutions and Clean Growth Advisory Council
- Accommodating LNG Canada within our climate goals is possible, but will require that we make faster progress on
 - Electrification of transport and heating
 - Implementing strategies that enable industries to be the least GHG-intensive per unit of output in the world

GHG EMISSIONS FORECAST – CURRENT POLICY

No LNG and LNG Canada



FORECAST LNG CANADA EMISSIONS

In Megatonnes

Case	Upstream GHGs	Facility GHGs	Total GHGs
LNG Canada 2 Trains	2.27 M	1.8 M	4.07 M
Aggressive upstream electrification (-0.6 M)	1.67 M	1.8 M	3.47 M
Lower incremental BC gas supply (-1.86 M)	0.41 M	1.8 M	2.21 M
Aggressive upstream electrification and lower incremental BC gas supply (-1.97M)	0.3 M	1.8 M	2.1 M

PREVENTING CARBON LEAKAGE

Government is committed to implementing a comprehensive Climate Action Plan that will meet B.C.'s carbon goals without disadvantaging our large industries

- B.C.'s clean, technologically-advanced industries compete against producers from parts of the world that have low or no carbon price
- Losing market share to companies who pay little or no carbon tax – *known as carbon leakage* – harms B.C.'s economy while causing higher global carbon emissions

COMPETITIVENESS FOR ALL LARGE INDUSTRY

LNG Canada project can serve as a template for establishing a low-carbon strategy for other sectors

- Global benchmark – cleanest in the world
- Rebate on new / additional carbon tax
- Benchmark becomes even cleaner over time

ASIA IS CONVERTING TO NATURAL GAS

- Asian demand for natural gas will continue to grow
 - B.C. can choose to supply low GHG-intensive gas, helping to offset some of developing world's carbon footprint
 - Or we can leave this demand to be supplied with higher GHG-intensive gas from other parts of the world

V. B.C. Provisional Commitments

OPTIONS FACING GOVERNMENT

I. Stick with inherited fiscal framework

Recognizing low probability of realizing economic benefits from B.C. resource endowments

II. Make changes to improve the cost-competitiveness of LNG development, coupled with stronger commitments on climate change and reconciliation with Indigenous Peoples

Thereby increasing the potential that one or more LNG projects is able to complete

After extensive analysis and deliberation, government has elected to proceed with Option II

SUPPORT FOR COST COMPETITIVENESS

- Government has advised LNG Canada that – if it makes a positive Final Investment Decision by November 2018 – B.C. will:
 - Provide a PST exemption on construction costs of the LNG facility, as would apply to any manufacturing facility
 - However, the government will recapture foregone revenues once the project is up and running
 - Carbon tax treatment consistent with that provided to all large industry
 - Supply electricity at the standard industrial rate
 - Repeal the LNG income tax

IMPORTANT POINTS TO EMPHASIZE

- We are not saying that the LNG Canada project is going ahead
- Government has clarified the fiscal framework that LNG Canada (or any LNG proponent) will face if it decides to proceed
- LNG Canada's decision will depend on their analysis of
 - Relative cost competitiveness
 - Commitments from the federal government
 - Support from First Nations, recognizing the government's commitments to reconciliation and UNDRIP



Questions?