

Investment Overview March 2018

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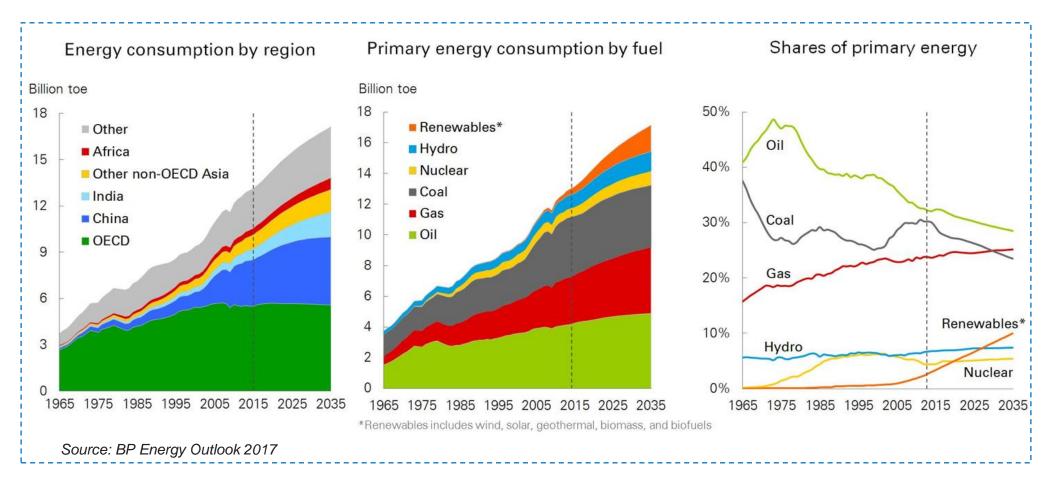
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# Agenda



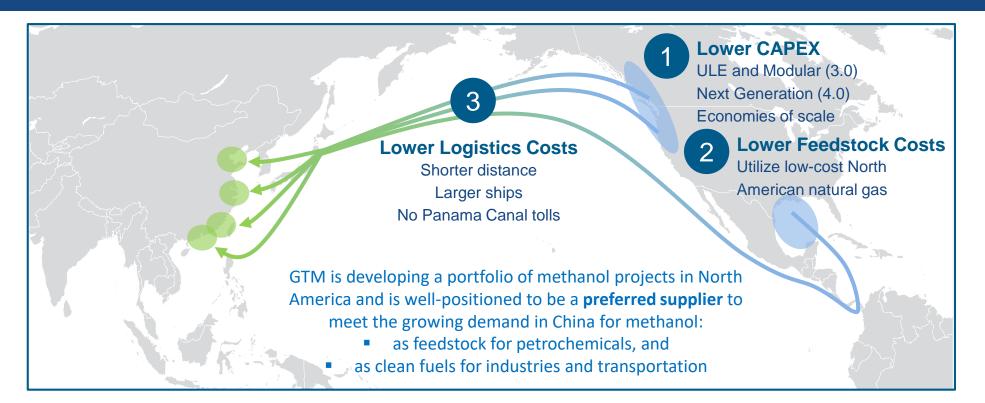
# GTM is Well-positioned to be a Leader in the Next Generation of Clean Energy

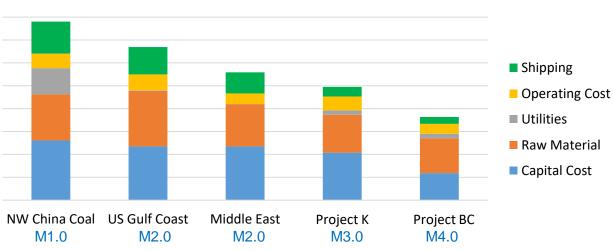
## Natural Gas and Renewables expected to increase share in Global Energy Mix



But storage and distribution are key challenges

# Lowest Landed Cost in Asia is GTM's Key Advantage





#### Total Landed Cost (Unit: \$/MT)

# GTM's experienced management underpins successful development of projects with compelling economics







## **Formation Milestones**



- > GTM, through its North American subsidiaries is developing a portfolio of methanol projects in North America.
- GTM is also positioning itself as a preferred supplier to meet the growing demand in China for methanol as feedstock for petrochemicals and as clean fuels for industries and transportation

# Introduction – CAS Holdings (CASH)



#### CASH 国科控股 CASH DIDINGS

- Established in 2002 as an investment and asset management company engaged in the operation of assets of state-level public institutions.
- Business activities include: (1) direct investment, (2) investment management, (3) industrial integration, (4) supervision of companies and tech transfer.
- Holds ownership in 37 companies, 22 of which are listed with a total market capitalization of RMB 456.2 bn

# **Introduction – Johnson Matthey**

#### JM Johnson Matthey Inspiring science, enhancing life

Johnson Matthey is a leading specialty chemicals company underpinned by science, technology and its people

### Key Figures (Mar 2017)

Sales £3.6 billion (USD 5.1 billion)

**Operating Profit** £513 million (USD 734 million)

Number of Employees 12,200

# Market Capitalization (Jan 2018)

£6.18 billion (USD 8.83 billion)







### Industries

JM's products and technologies are used in a wide range of industries around the world and have a positive impact on the environment, health and well being of millions of people every day.

Environmental Automotive Chemical Pharmaceutical / Medical Recycling Oil, Gas and Refineries

## **Management Team**



#### Simon Zhang - Chief Executive Officer

Experience: 20+ years in energy & chemicals; BP and ExxonMobil, leadership in Solar, Petrochemicals, Asian fuel marketing, Group Strategy, Group Treasury, and Process Technology

Carolina State, Physics .

Education: BS, Tsinghua; MS, Purdue: PhD, UWisconsin; MBA, UChicago; CFA

#### **GTM**

#### Yanning Luo - GTM/GTM VP, Engineering

- Experience: 15+ years tech development. engineering design and project management; BP, project engineering manager and plant operation
  - Education: BS. Tianiin University: NEBOSH UK. level 3

#### Yongsheng Gan – VP. Technology

- **Experience:** 15+ years petrochemical tech development, PDP, reactor design, scale-up, plant expansion, commissioning, startup, and project EPCM, Sinopec, BP
- Education: BS, MS, Tianjin University

#### Dinah Dong – Chief Financial Officer • Experience: 10+ years in in auditing, IPO and

- early-stage financial advisory; Roboterra Inc., Starr Strategic Partners
  - Education: BS, Fudan University; MBA, University of Virginia - Darden School of Business



#### Hsien Xiong Wong – Director, Strategic Proiects

 Experience: 10 years in investments and portfolio management, corporate finance, project finance; NUS Endowment, Aten Capital, ACME (Solar) India

Education: B.Eng (Mechanical Engineering) & MSc Real Estate, National University of Singapore; CFA



**GTM USA** 





# · Experience: 30+ years in energy. Extensive knowledge of



Pacific Northwest: Puget Sound Energy and Williams. including power & gas trading and business development Education: BS, University of Utah

#### Phil Eastland - VP, Technology Experience: 20+ years methanol plant commissioning,

design, technical and commercial management with JM Davy. Involved in over 20 Methanol Projects globally Education: BSC (Eng) ACGI from Imperial College London in Chemical Engineering



#### **Richard DeBolt** – Director of External Relations

- **Experience:** 20+ years in energy, economic development, stakeholder management, community affairs and as an elected State Representative, including time as party leader and other key positions
- Education: University of Wyoming, Bachelor of Arts, International Relations

#### **GTM CANADA**

#### Jeffry Myers - President & CEO



- Experience: 35+ years of experience in all aspects of the downstream energy sector; Westcoast Energy, co-founder Pristine Power
- Education: Western University. University of Windsor

#### Harvie Campbell - EVP, Commercial



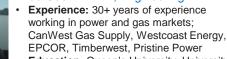
- Experience: 35+ years in the energy business with the last 25 focused on power project development, mergers and acquisitions; Westcoast Energy, cofounder Pristine Power, Clean Energy BC
- Education: University of Alberta, Simon Fraser Universitv

#### Mary Hemmingsen – EVP & CFO



- Experience: CPA with 25+ years of leadership experience in energy asset/portfolio management & related business and project development; BC Hydro, Brookfield, KPMG Partner-Global Head, Gas & LNG
- Education: Simon Fraser University. Harvard Business School, CPA

#### Fred Scott – EVP. Engineering



Education: Queen's University, University of Alberta



#### Experience: 20+ years in energy, private equity and technology; BP; Intel; New Asia Partners; JP Morgan; Credit Agricole Education: BS, Wharton; MA, SAIS

#### Kent Caputo – Chief Commercial Officer & General Counsel

- Experience: 25+ years of public and private sector legal. development and operational executive; Patton Boggs, Miller Nash, Kalispel Tribal Economic Authority
- Education: BS, JD, University of Puget Sound; LLM, Emory University

Experience: 30+ years in project development and

Education: Beaufort College, Electrical Engineering; North

management; Sanders Bros; Industrial Piping

## Clay Riding – VP, Resources

# **Top Tier Global Advisory Board**



## Kevin Rudd Co-Chair

*President*, Asia Society Policy Institute Australia's *26<sup>th</sup> Prime Minister* (2007-2010, 2013) & *Foreign Minister* (2010-2012)

- Ratified Kyoto Protocol in 2007
- Legislated 20% mandatory renewable energy targeted in 2008
- Co-founder of G20 in 2009 to address the Global Financial Crisis

Chair, Sanitation and Water for All (UNICEF)



## Gary Locke Co-Chair

Governor, Washington State (1997-2005)

- Strengthened economic ties between China and Washington State
- US Secretary of Commerce (2009-2011)
- Headed the President's National Export Initiative, boosting exports of Made in America goods & services by 17%
- US Ambassador to China (2011-2014)
- Co-chaired US-China Joint commission on Commerce and Trade



## Choon Fong Shih Member

University Professor, National University of Singapore (NUS) President, NUS (2000-2008) Member, Economic Review Committee, Singapore (2001-2004)

*Founding President*, King Abdullah University of Science and Technology, KAUST (2008-2013) *Senior Advisor*, University of Chinese Academy of Sciences (UCAS) and CAS Holdings, and *Consultant* to CAS

*Foreign Member*, US National Academy of Engineering and American Academy of Arts and Sciences



## David B. Sandalow Member

*Inaugural Fellow*, Columbia University's Center on Global Energy Policy

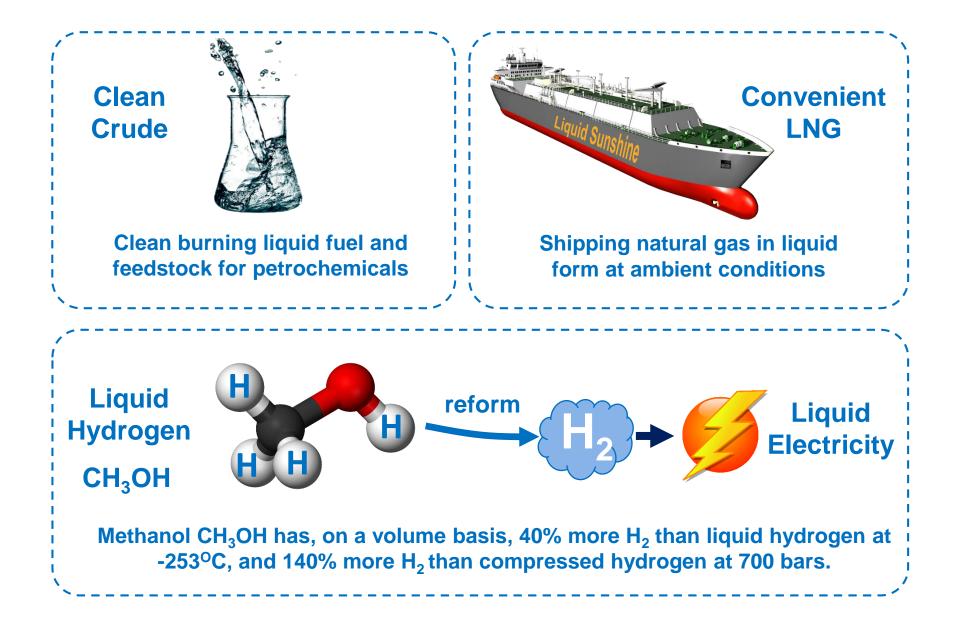
Directs US-China Energy & Climate program

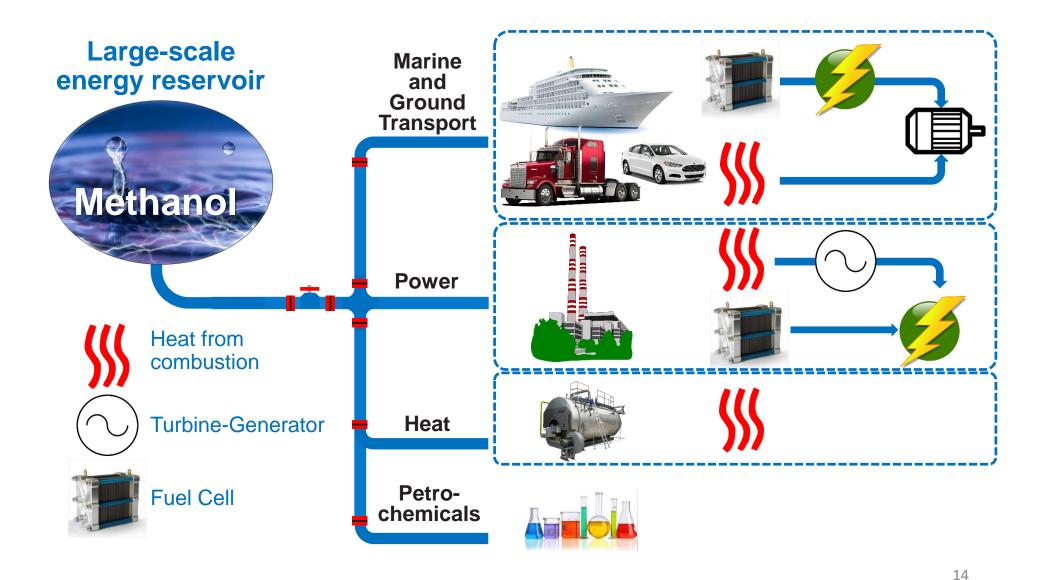
Under Secretary of Energy (acting) and Assistant Secretary for Policy & International Affairs, US Department of Energy (2009-2013)

*Chair*, Energy & Climate Change Working Group at the Clinton Global Initiative

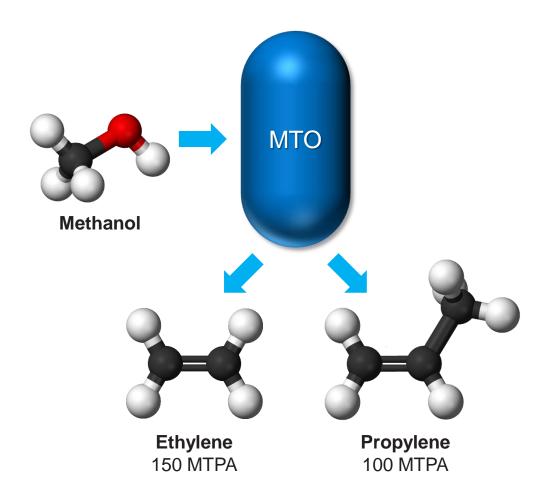


## Methanol is a Clean and Versatile Energy Carrier





# Sizing up the Market Opportunity – next 10 years Methanol to Olefins



### Methanol Opportunity 150-200 MTPA 20% global olefin market

Rapid rise of MTO production in China has been driven by Coal-to-Methanol-to-Olefins value chain.

MTO economics challenged considering historical spot price of methanol.

Spot price of methanol is driven by the marginal methanol producer, typically costly coal-to-methanol processes.

Integrating the value chain from low-cost gas-to-methanol and methanol-to-olefins unlocks economic value that can be distributed across the value chain via B2B agreements.

#### <u>Note</u>

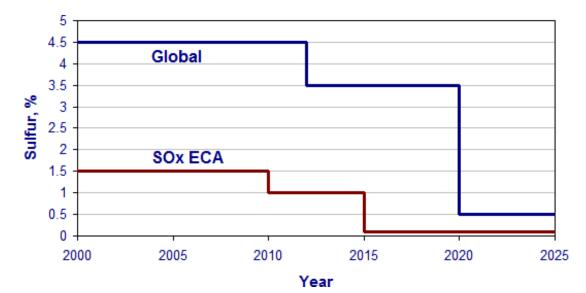
MTPA: Million Tonnes Per Annum Estimated market size of \$53-70 billion assuming \$350/tonne

# Sizing up the Market Opportunity – next 10 years Marine Fuels



#### **Stena Germanica**

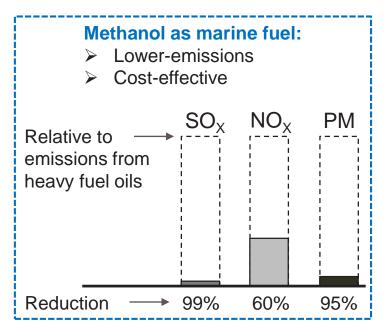
Converted in early 2015 to run on a 24 MW methanol dual-fuel propulsion system





Marine sector currently consumes 370 million metric tonnes Of bunker fuel per annum

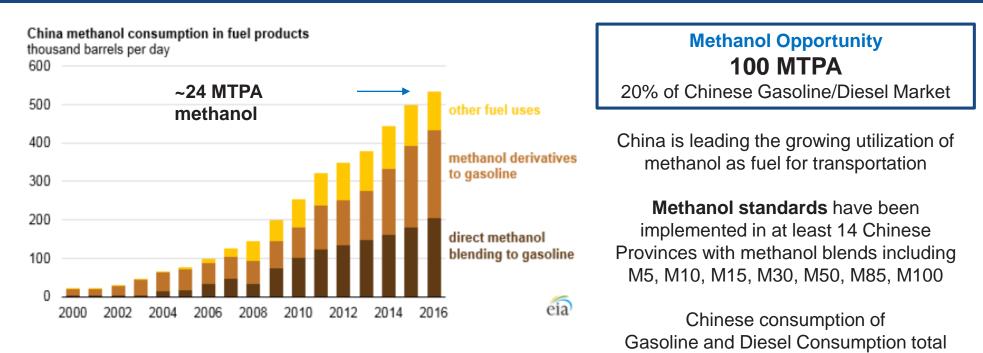
IMO standards on  $SO_X \& NO_X$  emissions to be met by 2020 within Emissions Control Areas (ECA)



Source: IMO, Methanex, Methanol Institute

Note: Estimated market size of \$42-53 billion assuming \$350/tonne

# Sizing up the Market Opportunity – next 10 years Ground Transportation Fuel



Substituting diesel as fuel for heavy-duty transportation

# Fuel for light-duty passenger vehicles

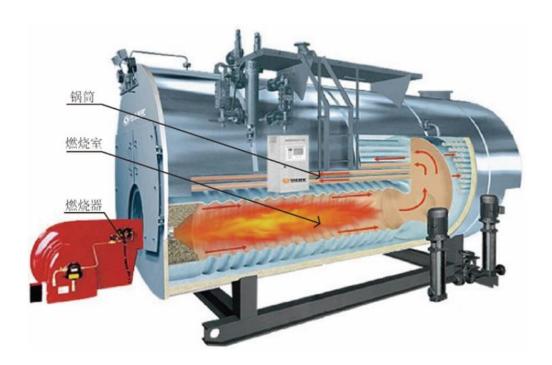
over 280 MTPA



Source: EIA, Geely, Methanol Institute

**Note:** Estimated market size of \$35 billion assuming \$350/tonne

# Sizing up the Market Opportunity – next 10 years Small to medium size industrial boilers



Methanol Opportunity 100-120 MTPA

20% of Chinese Small-Mid boiler Market

- The Chinese government has indicated that it plans for all coal-fired boilers with capacity of 35 tonnes / hour or less to be phased out in China by 2020
- Conversion to methanol: Creates attractive opportunity for the conversion to methanol-fired boilers
- Currently, 1000 converted boiler units in China consume around 1 MTPA of methanol

Over 600,000 small to medium size industrial boilers consume approximately 700 million metric tons of coal per year (18% of China's coal consumption)

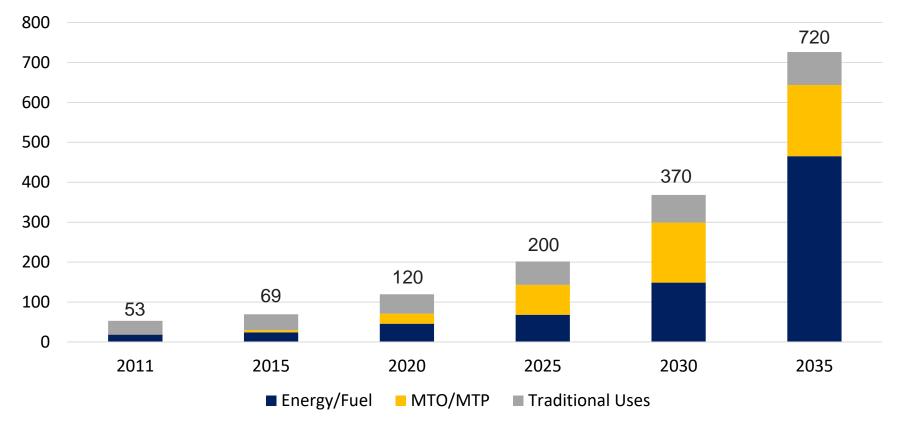
> Most of these small boilers are not fitted with systems to treat emissions contributing disproportionately to pollution

Source: Methanol Institute

Note: Estimated market size of \$35-42 billion assuming \$350/tonne

# Sizing up the Market Opportunity Energy Applications will Drive Methanol Market Growth

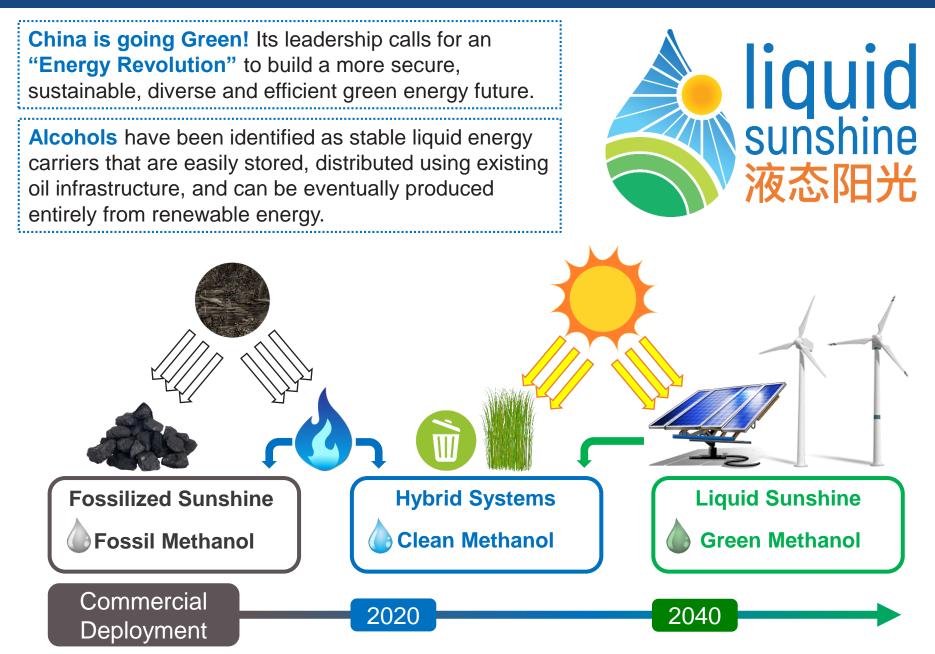
## Methanol Market Growth Potential (MTPA)



Source (2011, 2015): IHS Markit

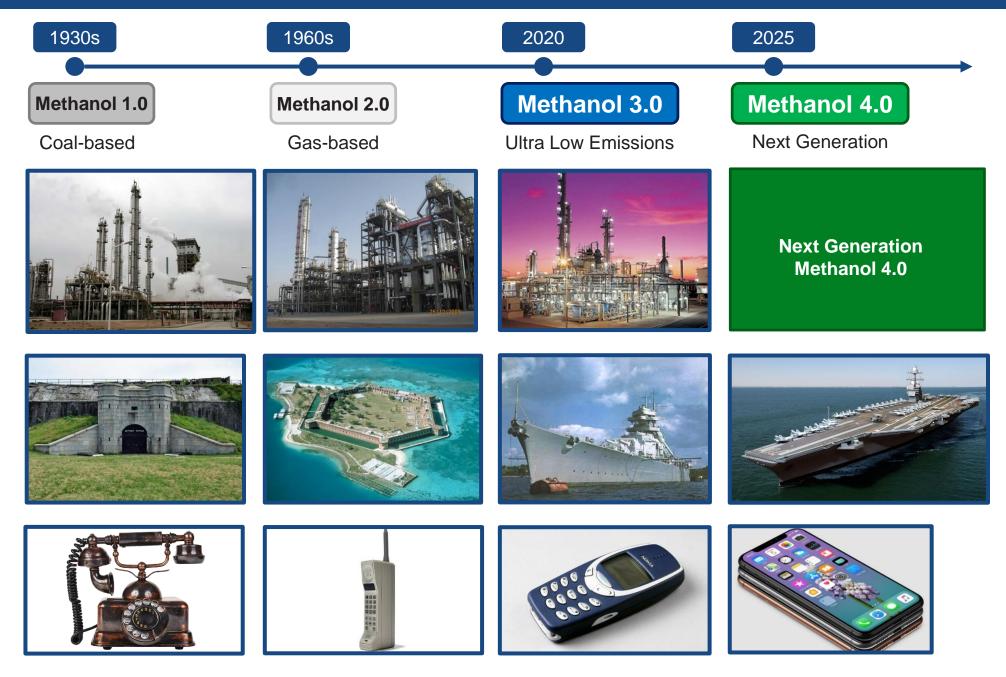
2020-2035: Internal projections taking into account methanol for energy applications

# Growth of Methanol Market underpinned by "*Liquid Sunshine*" strategy & roadmap





# Strategy Overview – GTM, a next generation energy major Revolutionizing Clean Energy Production



# **Current market price of major energy resources**

#### Today's Bullet Points

Issue:Mon Mar 5 2018 BJ Time Daily Spot:Mar 2 2018 US Time

Most Important Project Prices								
	Daily Spot Prices on Mar 2 2018 (US Time)			Last Weekly Average Prices- Weekly Updated on Mar 5 2018 (US Time)				
	Crude Oil WTI (Future)	Crude Oil Brent (Future)	Natural Gas Henry Hub	Naphtha (C&F Japan)	MeOH (CFR China East)	MeOH (FOB Houston TX)	Ethylene (CFR NE Asia)	Propylene -PG (CFR China)
Original Unit	\$/bbl	\$/bbl	\$/mmbtu	\$/MT	\$/MT	cent/gal	\$/MT	\$/MT
	61.25	64.37	2.63	569.05	363.20	117.30	1240.00	1089.60
\$/MT	448.82	471.68	130.19	569.05	363.20	390.22	1240.00	1089.60
\$/mmbtu (HHV)	10.40	10.93	2.63	12.49	16.75	17.99	25.22	22.83

Source: Energy Intelligence, Reuters, CMAI, 315.com.cn, Platts Energy

Reference Natural Gas Prices							
	Daily Spot	Prices on Mar 2 2018	Last Weekly Average Spot Updated on Mar 5 (US)				
	LNG CFR China	LNG CFR Japan	LNG CFR Korea	Natural Gas Henry Hub	Natural Gas AECO		
Original Unit	\$/mmbtu	\$/mmbtu	\$/mmbtu	\$/mmbtu	\$/mmbtu		
	8.42	8.49	8.32	2.61	1.93		
\$/MT	416.79	420.26	411.84	129.10	95.34		
\$/mmbtu (HHV)	8.42	8.49	8.32	2.61	1.93		

Source: Energy Intelligence, Reuters, Platts Energy, 315.com.cn , Bloomberg China

China Market Coal, Methanol and Olefin Prices								
	<u>Daily</u> (BJ Time)	Daily (BJ Time) Last Weekly Average Market Prices - Weekly Updated on Mar 5 2018 (BJ Time)						
	MeOH Mar 2 (CZCE Future)	Shanxi Coal 5500 (QHD FOB)	Shanxi Coal 5000 (QHD FOB)	MeOH Southern China	MeOH Eastern China	Propylene Zhejiang&Jiangsu		
Original Unit	RMB/MT	RMB/MT	RMB/MT	RMB/MT	RMB/MT	RMB/MT		
	2,670	580	545	2,866	2,859	8,279		
\$/MT	342.95	91.96	86.41	368.13	367.23	1110.74		
\$/mmbtu (HHV)	15.81	4.05	3.80	16.97	16.93	23.28		
Source: Zhengzhou Commodity Exchange(CZCE), finance.ifeng, oilchem.net, 315.com.cn								

# GTM (GTM): Building a Next Generation Energy Leader

#### **GTM Business Model**

- Asset-light and highly scalable development model:
  - GTM develops methanol projects site identification, permitting, securing logistics and offtake
  - Projects are separately funded by equity investors and debt
- Short development cycle:
  - GTM invests development capital to develop each project over 2 to 4 years.
  - At financial closure of each project, GTM receives an upfront development fee

## **Great Upside Potential**

- Robust pipeline of projects:
  - First two-line project at Kalama, Washington approaching Final Investment Decision ("FID")
  - Additional sites identified and/or under site control
  - Currently the only player in U.S. West Coast and British Columbia with a portfolio of advantaged sites
- Substantial interests in project economics
  - At FID, GTM also receives substantial interests in the future cash flows of the project, with typical NPV worth several multiples of development cost
- Methanol 4.0 GTM will be a Game Changer
  - GTM is innovating the next generation methanol production model that will further reduce capital costs, costs of capital, and shorten development & construction cycles
  - Concept likely to be implemented initially in Gulf of Mexico

### **GTM Key Competitive Advantages**

- Lowest landed cost of methanol in Asia:
  - Low Capital Costs: Modular, economies of scale
  - Low Feedstock Costs: West Coast natural gas (AECO)
  - Low Logistics Cost: Shortest shipping route, large ships
- Proprietary Market Access:
  - GTM's founding shareholder (CAS Holdings) has opened relationships with high credit quality MTO and other largevolume users in high-growth, high-margin Chinese and Asian markets, with long-term take or pay contracts

## **Excellent Downside Protection**

#### BC Winter pipeline contract

- GTM receives stable annual cash flow from a 45 year BC pipeline contract for winter capacity
- NPV of the contract is U\$300 million.

## **GTM Methanol Project Sites**



Several additional locations under investigation or negotiation

## **Investment Options**

- I. High yield debts + Free warrants
- II. Convertible Preferred equity

All tranches up to \$200 million in aggregate

## Exit Routes

#### Common equity

- I. IPO offering and exit IPO process will begin upon FID of Kalama with expected IPO in around 2020
- II. Third Party Acquisition

Preferred equity

- I. Conversion to common at discount to valuation of subsequent fund raising round
- II. Roll-over into subsequent Preferred tranche
- **III.** Third Party Acquisition

Financial Advisor

#### **Rx Investment Management Corporation**

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