

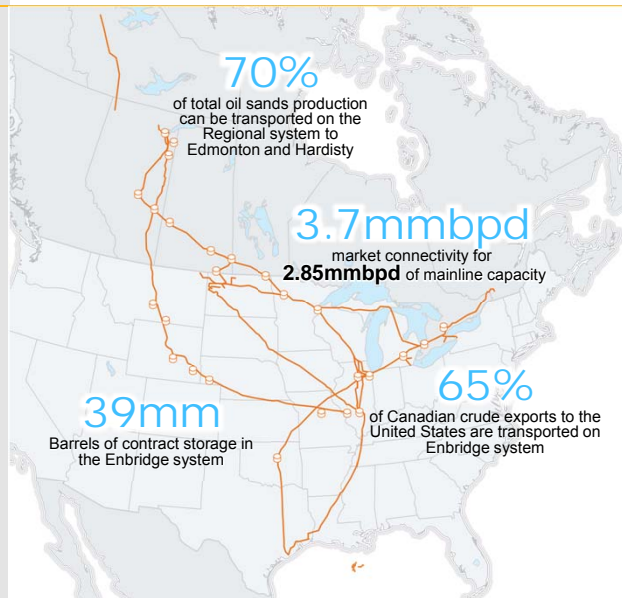
# Liquids Pipelines

**grow organically.  
minimize risk.  
streamline.**



Guy Jarvis  
EVP & President Liquids Pipelines

## North America's premier crude oil infrastructure portfolio



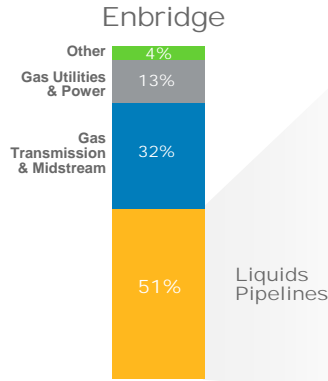
### Largest crude oil pipeline network in the world

- 27,600 km of pipe serving high quality producing basins
- Connected to the best refining markets
- Competitive and stable tolls drive highest producer netbacks
- Stable, low risk commercial underpinnings over the longer-term
- Strong, creditworthy customers
- Unique service offerings and flexibility
- Well-positioned for future growth

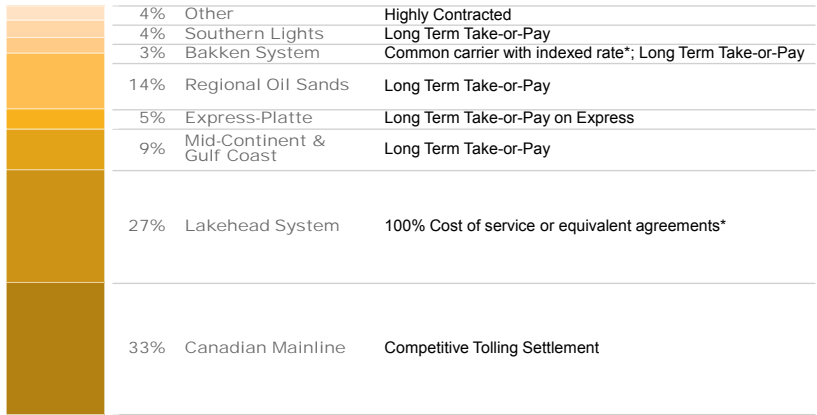
# Large Stable Contributor to Enbridge EBITDA



## 2018e EBITDA



## 2018e LP EBITDA by Business



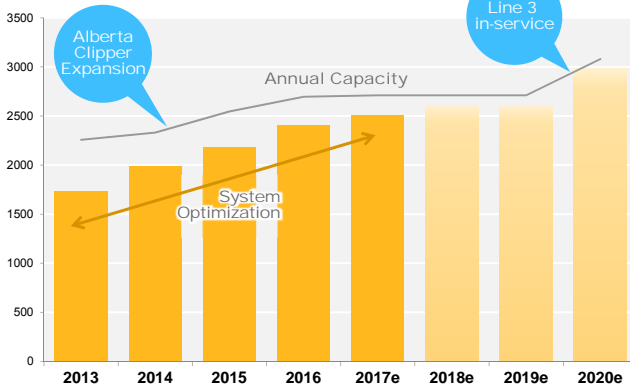
**Liquids Pipelines are core to regulated pipeline and utility business model**

\*Contract terms for our Lakehead system expansion projects mitigate volume risk for all expansions subsequent to Alberta Clipper. In the event volumes were to decline significantly the pipeline could potentially file cost of service rates. Similarly, the Bakken Classic system can also file cost of service rates if there is a substantial divergence between costs and revenues on the pipeline.

# Enbridge System Likely to be at Maximum Capacity



## Mainline Volume Outlook Ex-Gretna Deliveries (KBPD)



- Focused on maximizing throughput and operating efficiencies
- Additional system optimizations increased throughput by 87kbpd in 2H 2017
- Expect to be at or near capacity through expiry of CTS in 2021
  - Strong supply growth
  - Competitive tolls
  - Limited pipeline alternatives
- Line 3 Replacement project restores +375 kbpd in 2H 2019

**Enbridge system throughput to grow from 2.5 to 3.0 MMBPD by 2020**

# Liquids Pipelines Project Execution



## 2017 Projects Completed

Project	ISD	Contract life
✓ Athabasca Pipeline Twin	Jan	25 yrs
✓ Norlite Diluent Pipeline	May	25 yrs
✓ Bakken Pipeline System	June	7-10 yrs
✓ JACOS Hangingstone	Aug	20 yrs
✓ Wood Buffalo Extension	Dec	25 yrs

~\$6B  
Projects placed into service 2017

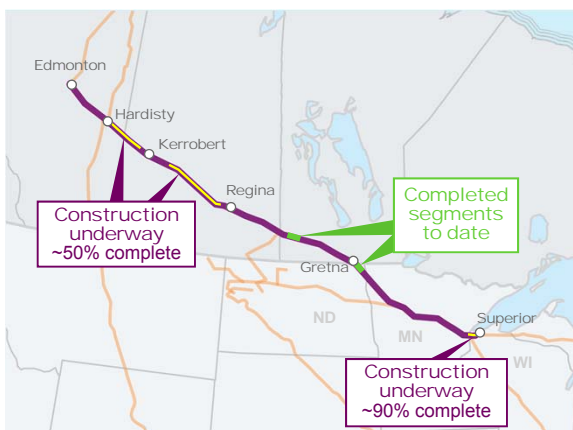
## 2019 Mainline Secured Projects



~\$9B  
Projects to be placed into service 2019

Project execution driving significant near term cash flow growth

# Line 3 Replacement Progressing Well

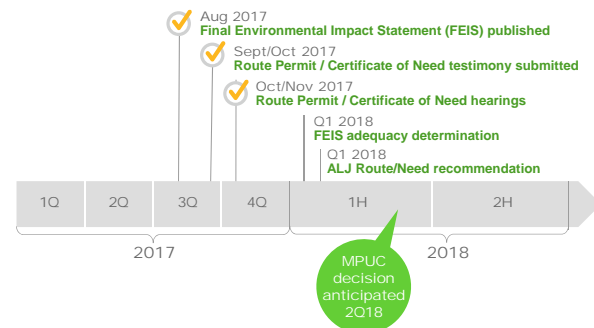


**Capital:** C\$5.3B / US\$2.9B

**Toll:** Surcharge on every mainline barrel for 15 years

- Critical infrastructure replacement
- Construction progressing well in Canada & Wisconsin
- Minnesota regulatory process ongoing
- Target ISD 2H 2019

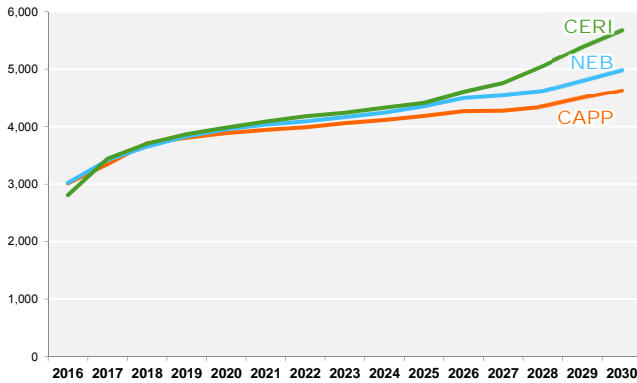
### Regulatory Milestones:



# Canadian Oil Sands Positioned for Steady, Longer Term Growth



Canadian Oil Sands Supply Forecasts\* (KBPD)



\*NEB and CERI raw bitumen forecasts altered to reflect blended supply forecasts

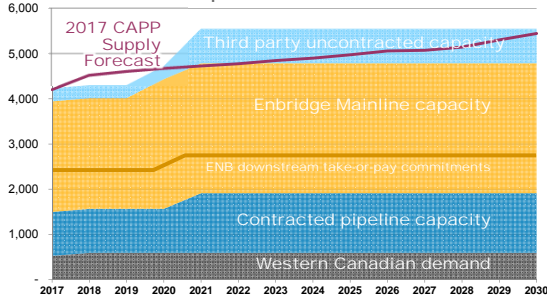
- Expected continued growth in the oil sands supports Enbridge systems upstream, mainline and market access
- Independent forecasts expect growth of ~850 KBPD in oil sands supply, 2016-2022
- Long term resource potential
  - 170 billion barrels of long lived reserves
  - In-situ break-even <\$60 WTI
  - Average operating costs \$5.75 – 7.50/Bbl
  - Emissions/unit reductions of 20% since 2012 (tonnes CO2/Bbl)

# Export capacity picture remains unclear post 2021 Enbridge Mainline Expected to Remain Highly Utilized



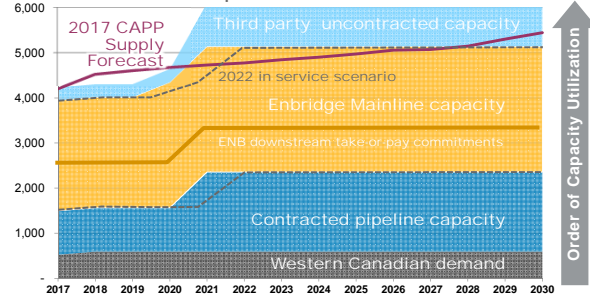
## WCSB Pipeline Utilization Scenarios Post-2021

One New Pipeline Scenario (KBPD)



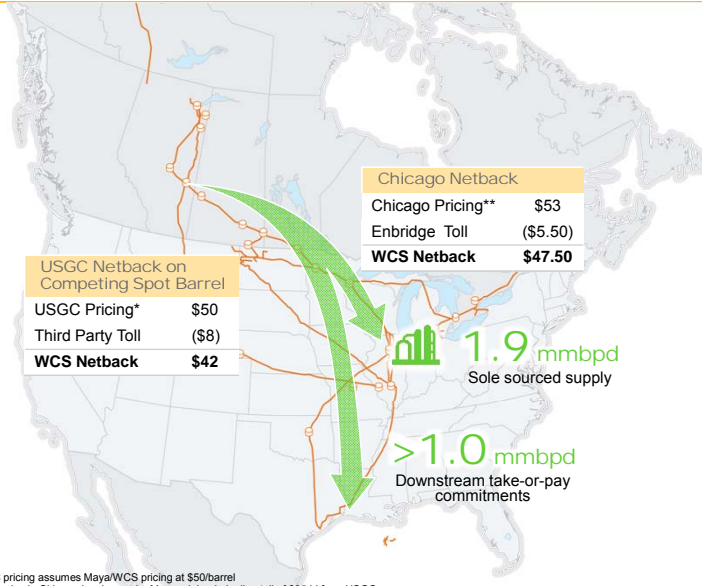
- Downstream commitments and strong netbacks ensure the Mainline is first choice for uncommitted WCSB barrels
- Mainline is expected to remain at full capacity in one export pipeline scenario

Two New Pipelines Scenario (KBPD)



- Two new pipeline scenario unlikely to impact revenue through 2021
- Post 2021, Mainline competitiveness and new incentive tolling mechanism with volume protection ensures minimal financial impact
- Mainline returns to full capacity as production growth continues

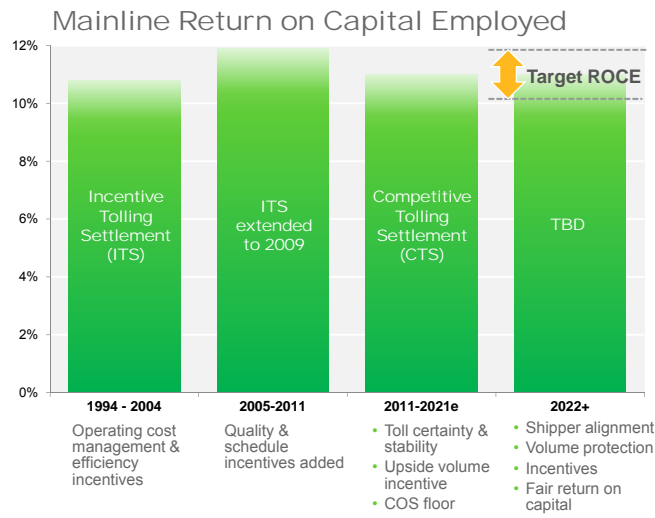
# Mainline Competitive Positioning beyond 2021



- PADD II market provides the highest netback for WCSB producers
- Spot barrels on 3rd party pipelines to USGC erodes WCSB producer netback
- Mainline connected to 1.9 mmbpd of 'sole sourced' refining demand in this region
- Over 1 mmbpd of long term take or pay downstream commitments

\* USGC pricing assumes Maya/WCS pricing at \$50/barrel  
 \*\* WCS price in Chicago is price set by Maya + inland pipeline toll of \$3/tbl from USGC

# Long Track Record of Mutually Beneficial Agreements with Customers



## CTS Re-negotiation Principles

- Interest alignment through incentive based frameworks
- Progressive and adaptive through market cycles and customer needs
- Appropriate sharing of value/risk/reward
- Fair return on capital

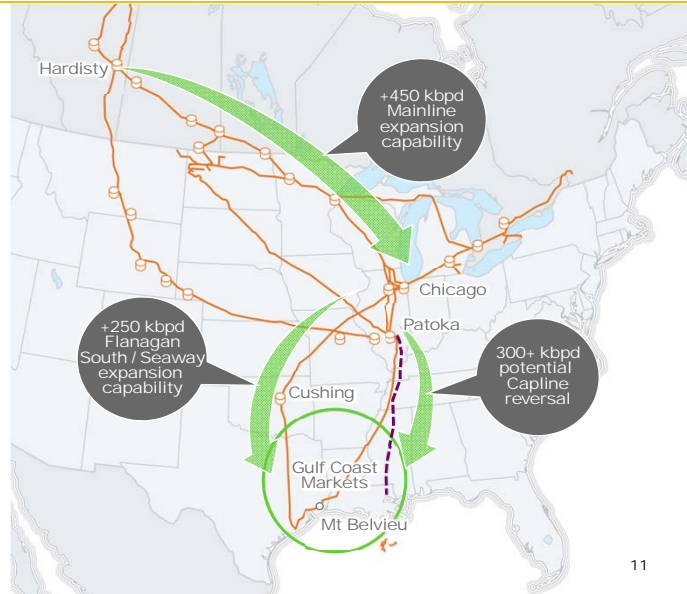
## Low cost, highly executable, staged expansions to match supply growth Mainline Expansion Opportunities



Incremental Capacity 2019	Capacity (KBPD)
System DRA Optimization	+75
BEP Idle*	+100
Incremental Capacity 2019+	
System Station Upgrades	+100
Line 4 Capacity Restoration	+25
Line 13 Reversal	+150
<b>Total Unsecured Incremental Capacity</b>	<b>+450</b>

\*Incremental capacity refers to long-haul volumes

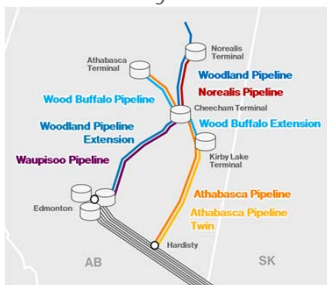
**\$2-4B**  
in opportunities



## Other Development Opportunities



### Oil Sands System



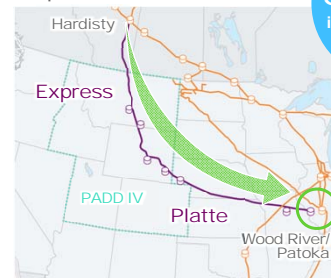
- Well positioned in oil sands to capture future supply growth
- Connected to growing projects
- Geographically diversified
- Additional capacity on trunk lines

### DAPL Expansion



- Bakken supply growth could drive future DAPL expansion
- Leveraging highly competitive tolls
- Strong Patoka/USGC markets

### Express-Platte



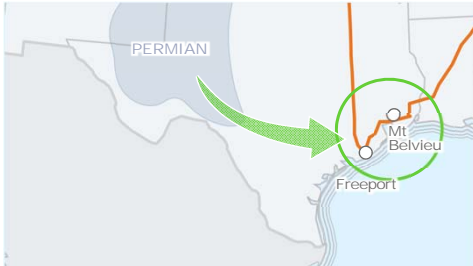
- Express-Platte system optimization or expansion
- Market access to Cushing/USGC
- Extension to Patoka

**\$1-3B**  
in opportunities

## New Platform Development Opportunities

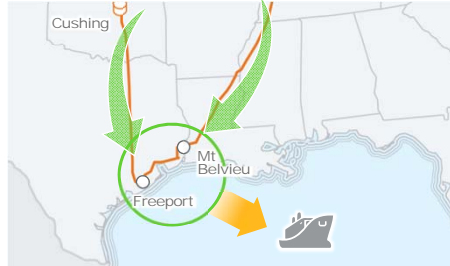


### Permian Strategy - Gray Oak



Objective: Expand liquids footprint into Permian Basin  
Opportunity: High drilling activity and supply growth point to pipeline shortage.  
Project Gray Oak: Joint venture with Phillips 66

### USGC Strategy



Objective: Leverage expertise to expand footprint in USGC  
Opportunity: Growing crude exports drive the need for deep water export facilities development  
Leverage expertise in fee-for-service, independent terminal and pipeline operation

**\$2-3B**  
in opportunities

**Strong fundamentals present opportunity to expand into new markets**

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## Liquids Pipelines Key Priorities



### **grow organically.**

- Execute Line 3 Replacement Project
- Additional expansions of mainline and market access footprint

### **minimize risk.**

- Re-negotiate mainline commercial agreement with appropriate risk mitigation framework

### **streamline.**

- Assess revenue synergy opportunities
- Cost efficiency focus

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# Q&A

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