



# Hangingsstone Oil Sands Project in Alberta, Canada

<Supplementary material>

**December 14, 2012**

**Japan Petroleum Exploration Co., Ltd.**

# Cautionary statement

---

This is a supplementary material to our press release “*Final Investment Decision on Hangingstone Oil Sands Project in Alberta Province, Canada*” released on 14<sup>th</sup> December, 2012.

Any information contained herein with respect to JAPEX’s plans, estimates, strategies and other statements that are not historical facts are forward-looking statements about the future performance of JAPEX. Readers should be aware that actual results and events may differ substantially from these projections due to various factors.

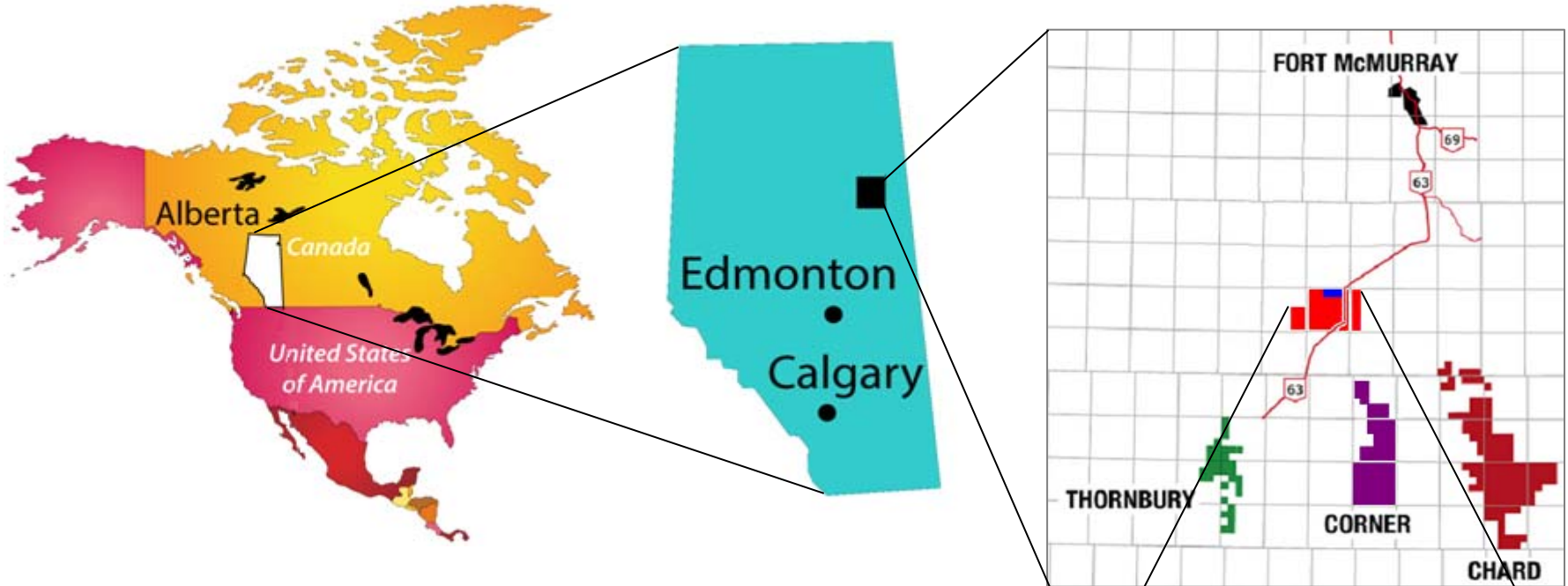
The provision of this document should not be construed as a solicitation for investment.

**Copyright :** All information contained herein is protected by copyright, and may not be copied or reproduced without the prior consent of JAPEX.

Any inquiries about the information contained herein or other Investor Relations questions should be directed to:

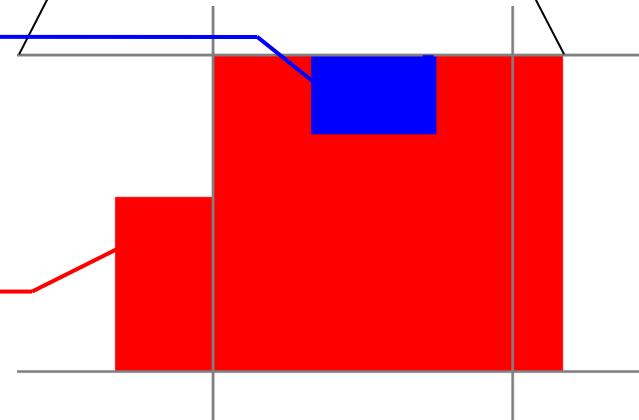
Media & Investor Relations Department,  
Japan Petroleum Exploration Co., Ltd. (JAPEx)  
TEL: [+81-3-6268-7110](tel:+81-3-6268-7110)

# Location Map of Hangingstone Area




Demonstration project area  
(Currently producing)

Hangingstone project area  
(subject of this Final Investment Decision)



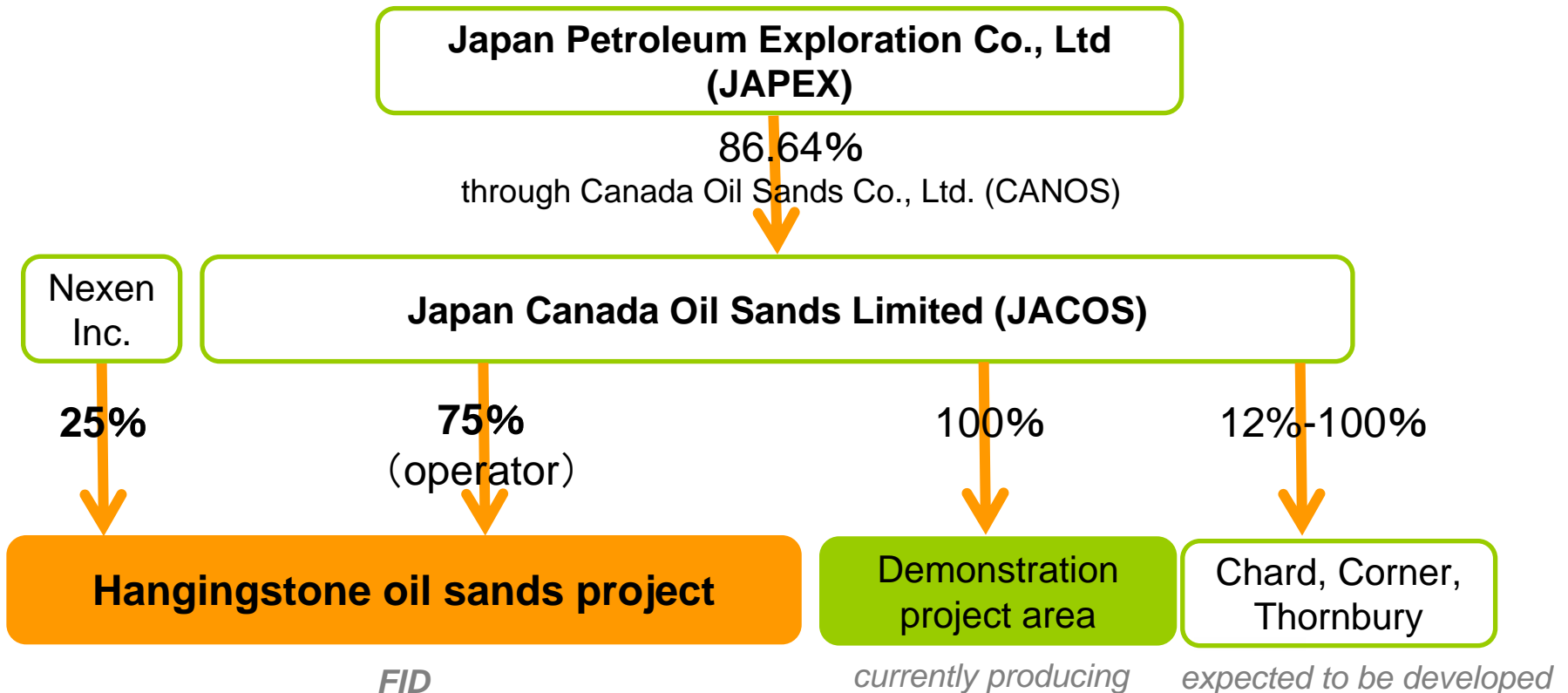
# History of the Development in Hangingstone Area

---

- 1978 Japan Canada Oil Sands Limited (JACOS) was established. (joint investment of Japan National Oil Corporation (JNOC) and 62 Japanese companies).  
JACOS started pilot tests for commercial production (including the electric pre-heating tests / the cyclic steam stimulation (CSS) method) jointly with three Canadian companies including Petro-Canada(then) as a national project.
  
- 1997 Started demonstration test of Steam Assisted Gravity Drainage (SAGD) method in demonstration project area.
  
- 1999 Jun. Started test production using SAGD method.
  
- 2003 Jan. Transition from test production to commercial production.
  
- 2008 May Announcement of the Hangingstone oil sands project in an undeveloped area adjacent to demonstration project area. Started environmental impact assessment.
  
- 2010 Mar. Completed environmental impact assessment.  
Apr. Application was filed in Alberta Provincial government (ERCB and AESRD).
  
- 2012 Nov. ERCB Scheme Approval was granted.  
 **Dec. Made final investment decision (FID) for Hangingstone project.**

# Project Highlight: 1

- 14<sup>th</sup> December, 2012: FID for the Hangingstone oil sands project
- First Half of 2016 : Production start-up (plan)
- Participation interests:



# Project Highlight: 2

---

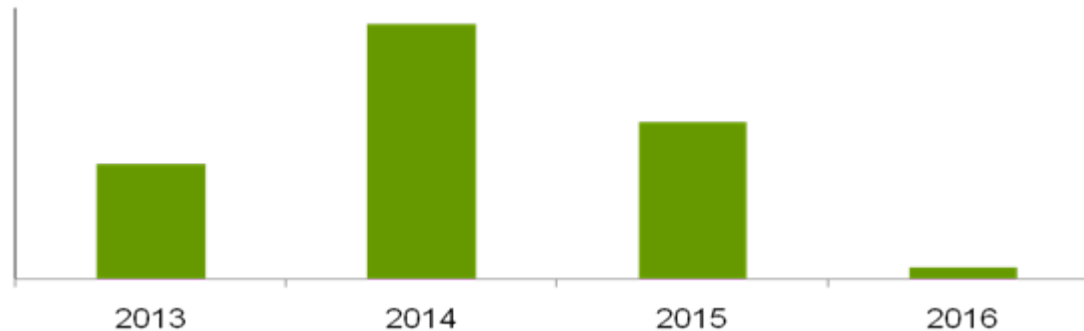
- **Adoption of staged development approach** considering investment timing and technical risks.
  
- **Bitumen Production Volume (plan):**
  - At the initial development : approximately 20,000 barrels/day
  - ⇒ Facilities are expandable to the maximum capacity of 30,000 barrels/day
  
- **Reserves volume:**
  - Project duration will be approximately 30 years
  - Stable production
  - Reserves will be booked based on evaluation as of the end of March, 2013 in an appropriate manner considering staged development approach.
  
- **Marketing:**
  - Plan to be sold as diluted bitumen equivalent to heavy crude oil after dilution by ultra-light crude oil such as condensate.
  - Plan to be sold mainly to refineries in U.S.A. through pipelines.

# Project Highlight: 3

---

## ■ Total development costs :

- At the initial development : 1.4 billion Canadian Dollars  
Net to JACOS (75%) : 1.1 billion Canadian Dollars  
(90 billion Japanese Yen)
- Annual development costs (Image)



- Stages of the development will follow the initial development after start-up of the operation

## ■ Financing:

- At the initial development : Apply **own funds and bank loans**
- At the staged development after the initial development:  
Apply cash flows gained from the initial development production

## ■ Economics:

- Long and stable cash-flows after production start-up
- Adequate economics (IRR) to meet our company's standards

# Project Schedule



FID

Early Civil Work



Horizontal Wells Drilling



Central Processing Facility



Field Facilities



Start Up



Start of flowlines construction



Start of well facilities construction



Injection of steam → Commencement of production



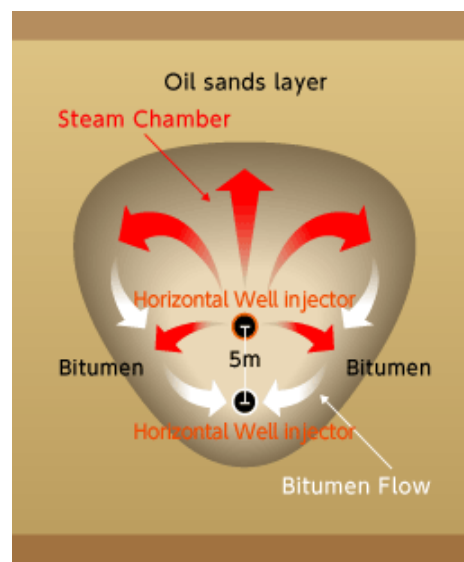
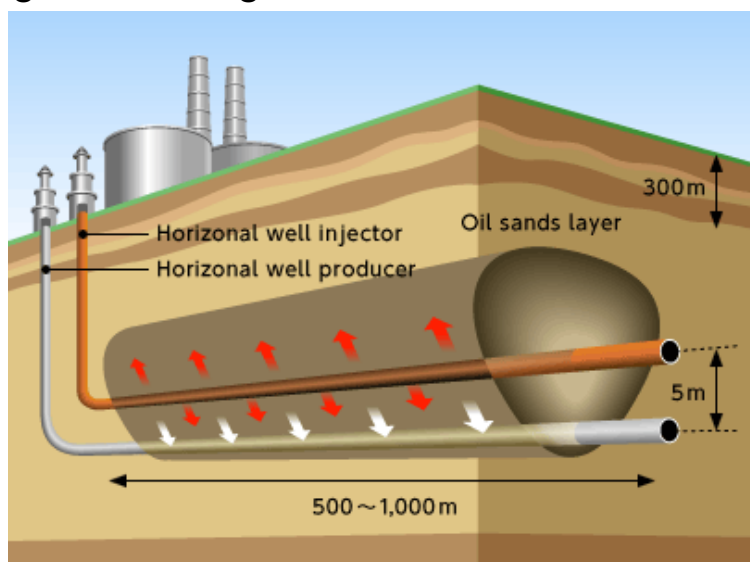
# What's oil sands ? What's SAGD ?

## ■ Oil sands / Bitumen

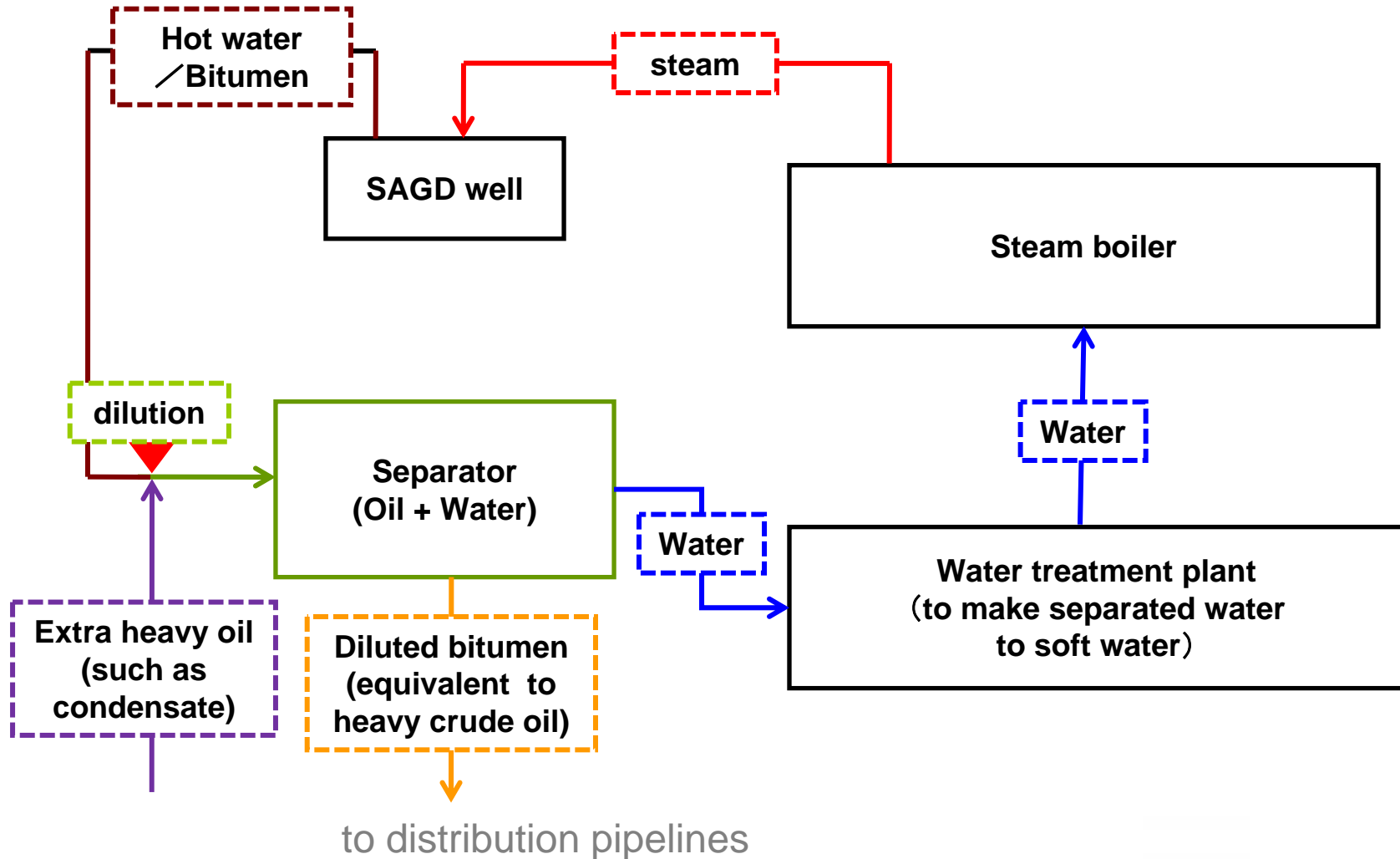
- Oil sands: Sandstone including non-fluid, high viscosity and tarry crude oil
- Bitumen: A kind of crude oil extracted from oil sands layer; extra heavy oil.

## ■ Steam Assisted Gravity Drainage(SAGD) method

- Two wells with horizontal sections of between 500 to 1,000m are drilled at an exact distance of 5m between the upper and lower wells.
- Heating the oil sands layer by continuously injecting high-temperature, high-pressure steam in to the upper well.
- Bitumen becomes fluid, and then flows down to the lower well and emerges above ground along with warm water.



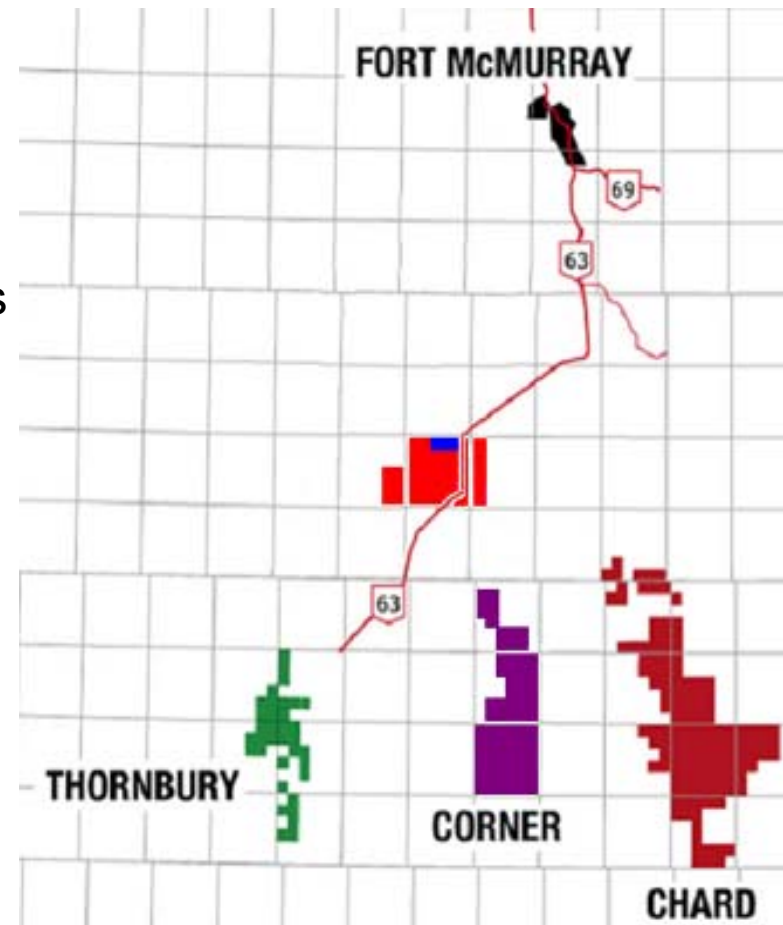
# Schematic flow line of facilities



# Meaning of Hangingstone project for JAPEX

- One of our big three overseas projects including Indonesia(Kangean) and Iraq(Garraf) in our target of shifting investment overseas.
- Japex has much technical knowledge in Hangingstone project area through over 30 years study of oil sands and over 10 years experience of SAGD operations.
- Stable cash flows
- Japex also plans to consider possibility to develop other undeveloped leases including Chard, Corner and Thornbury.

Areas in which JACOS holds interests in oil sands leases



# Outline of Project Companies

---

## ■ **Canada Oil Sands Co., Ltd.** (CANOS, Japanese entity)

- Established : 1978
- Capital: 1.682 billions of Japanese Yen
- President: Kiyoshi Ogino
- Interests: JAPEX 86.64%, other 11 shareholders 13.36%

## ■ **Japan Canada Oil Sands Limited** (JACOS, Canadian entity)

- Established: 1978
- Capital : 297,170 thousands of Canadian Dollars
- President: Toshiyuki Hirata
- Interests: CANOS 100%