

PS2: GOING GLOBAL

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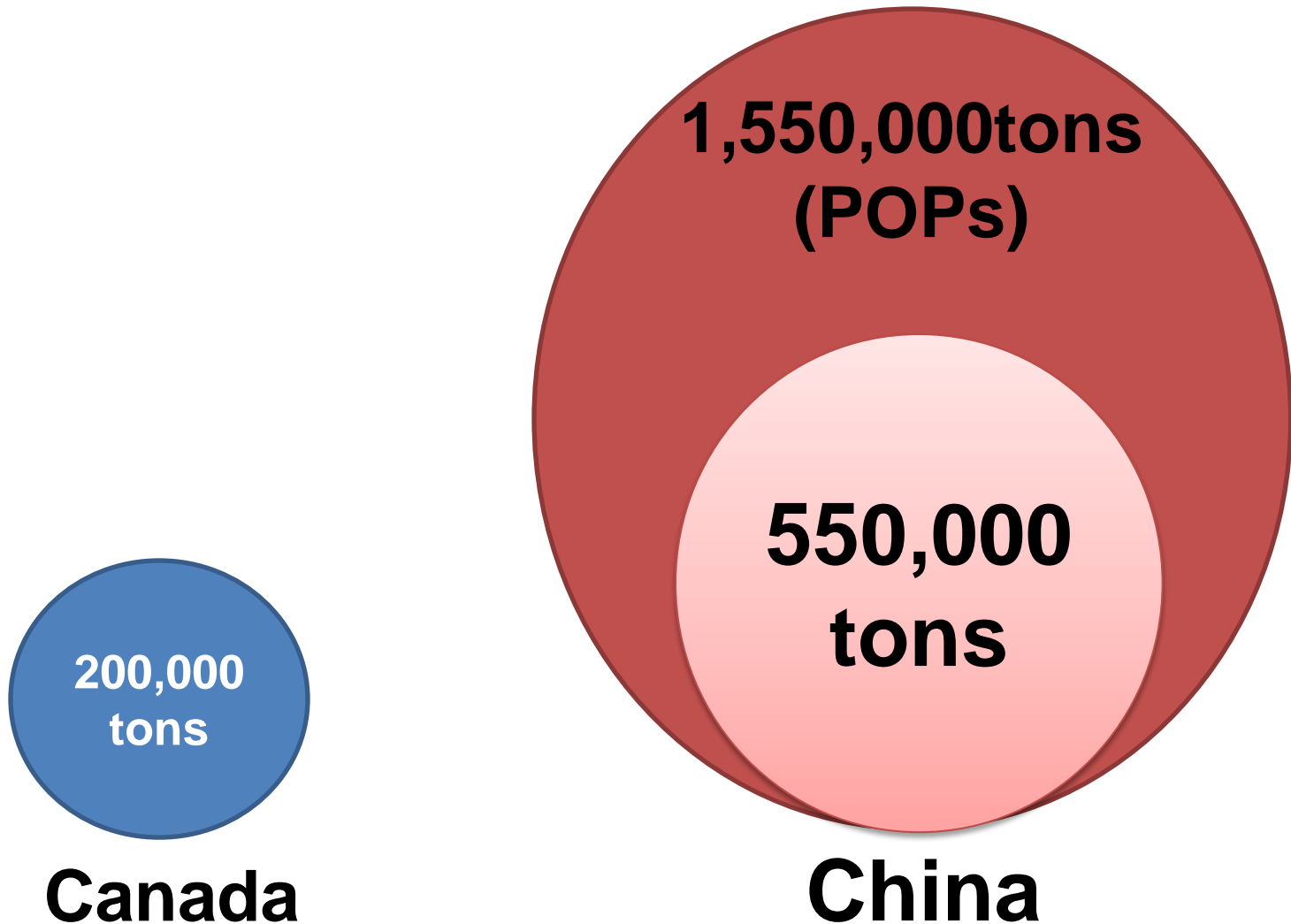
Conclusion





ENTER CHINA
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Current PCB/POPs Markets







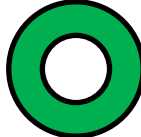
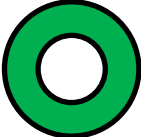
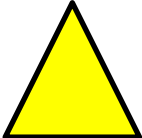
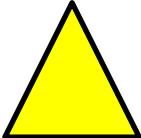






Canadian Market projected to be
depleted in 2 years

PS2 needs to find
another Market



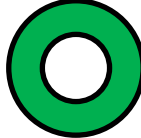
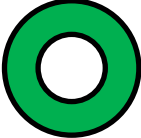
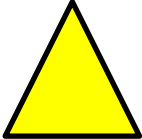
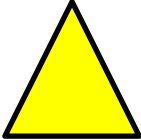






Possible Markets

	Current Market Size	Future Market Size	Barriers to Entry	Competition
China	Large	Large	Low	Low
Canadian Oil Sludge	Moderate	Moderate	Low	Medium
US PCB	Moderate	Small	High	High

Possible Markets

	Current Market Size	Future Market Size	Barriers to Entry	Competition
China				
Canadian Oil Sludge				
US PCB				

Possible Markets

	Current Market Size	Future Market Size	Barriers to Entry	Competition
China				
Canadian Oil Sludge				
US PCB				

China Offers an Opportunity for
attractive Emerging Markets



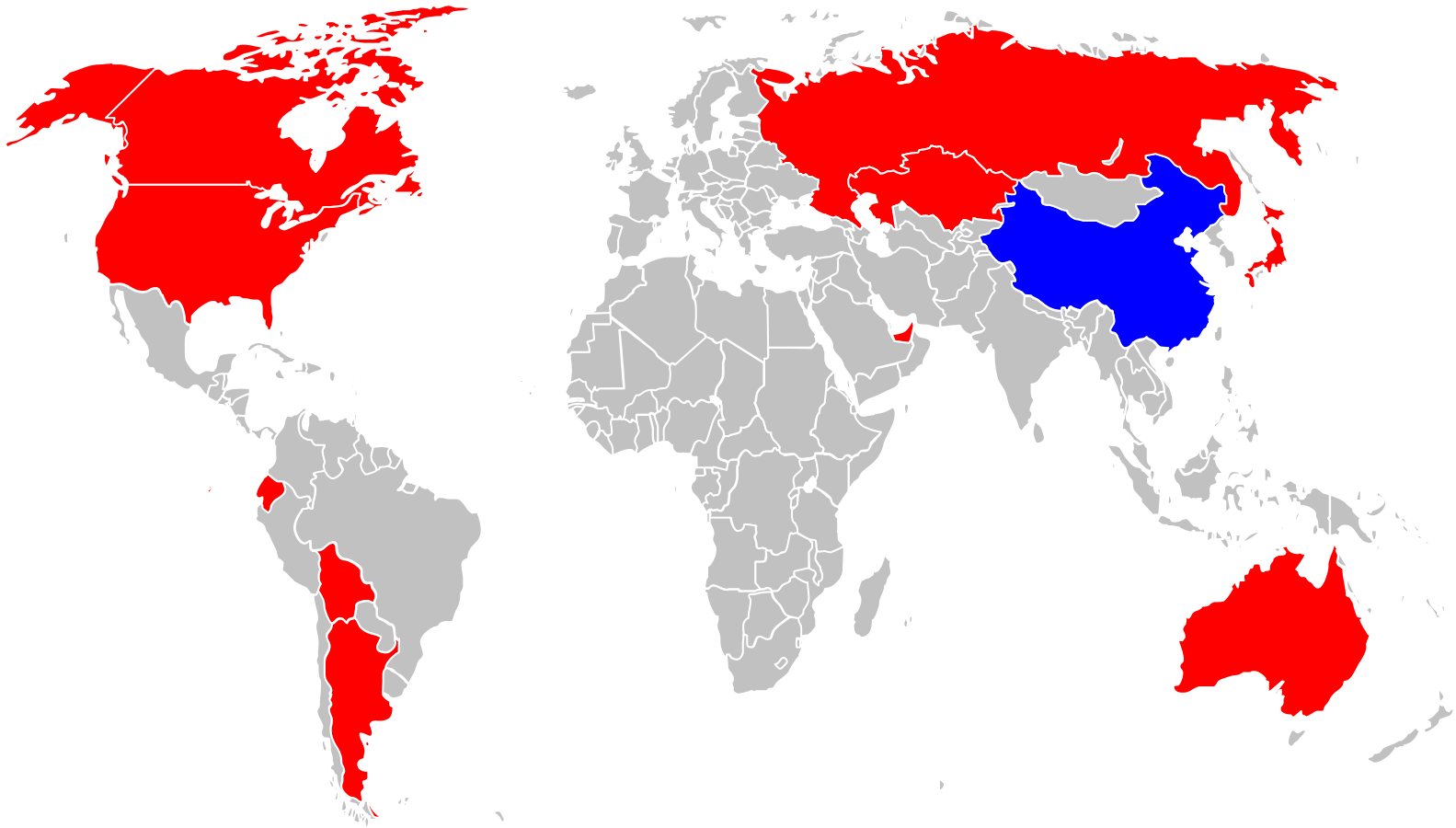


- ✓ **POPs & PCB**
- ✓ **Oil Sludge**
- ✓ **Pharmaceutical Wastes**
- ✓ **Pesticides**

A photograph of two men in dark suits shaking hands. The man on the left is a white man with short brown hair, smiling. The man on the right is an Asian man with glasses, also smiling and clapping his hands. They are standing in front of a dark wood-paneled wall. To the left is the Canadian flag, and to the right is the Chinese flag. The text "Interest & Support from the Chinese Government" is overlaid in white on the lower half of the image.

Interest & Support from the
Chinese Government

Firm's International Experience





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PHASE SEPARATION SOLUTIONS

“to become a fully
integrated and more
diversified
environmental service
company.”





NEIS

“key technical provider
for policies, legislation,
action plans &
technical guidelines on
biodiversity
conservation in China.”

NAHAI

“to become a leader in solid waste management company in Zhejiang, Zhoushan area”



Partner with **NIES**,





then with Nahai

Alternative Matrix Evaluation

Criteria	Importance	JV w/ NIES	JV Both	JV w/ Nahai
Financial ST	MED	-	+	+
Financial LT	HIGH	+	+	+
Competitor Response	LOW	+	+	-
Marketplace Conduciveness	HIGH	+	+	+
Low Risk	HIGH	0	+	-
Synergy	MED	+	0	+
Cash Flows	HIGH	-	+	-

Alternative Matrix Evaluation

Criteria	Importance		JV Both	
Financial ST	MED		+	
Financial LT	HIGH		+	
Competitor Response	LOW		+	
Marketplace Conduciveness	HIGH		+	
Low Risk	HIGH		+	
Synergy	MED		0	
Cash Flows	HIGH		+	

JV with Both

However, there are **constraints**

Labor/HR Constraint

Financial Constraint

Which project should PS2
pursue first

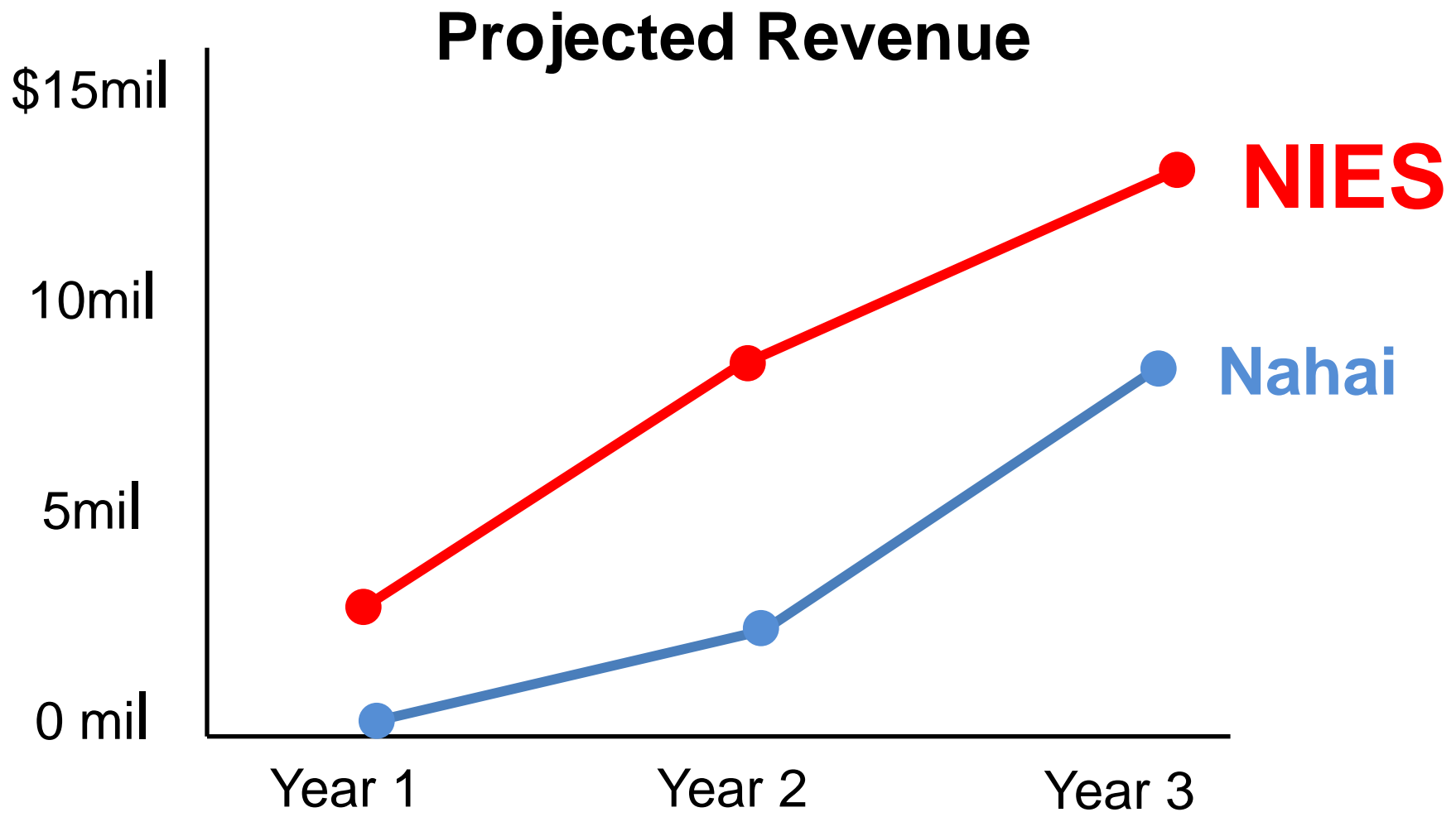
Partner with NIES first



Support from the State



Immediate Source of Larger Revenue



Partner with **NIES**





then with Nahai

Overview

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50:50 Contractual Based JV
with NIES

60:40 Contractual Based JV
with Nahai

50:50 with NIES

Cost Sharing

Little Threat with IP

Emphasis on nationalism

60:40 with Nahai

Risk of IP Dilution

Cost Sharing

Existing Infrastructure

Comparison of Joint Ventures

1. **Equity**
2. **Contractual**

Equity

Sharing of mutual risk and reward

Minimum of 25% stake in company by FI

Cooperation is Key

Contractual

Negotiable Terms

Profit Sharing on per contract basis

50:50 Contractual Based JV
with NIES

60:40 Contractual Based JV
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1 st Q 2010	2 nd Q 2010	3 rd Q 2010	4 th Q 2010	1 st Q 2011	2 nd Q 2011	3 rd Q 2011	4 th Q 2011
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CHINA

Invest with NEIS

On-site research on
POP/PCB

Full-scale operations at the new facility

Hiring, Training & Establishing Facilities

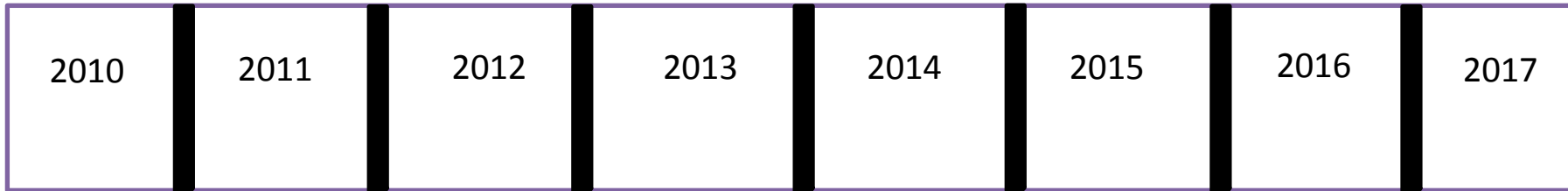
CANADA

Resource allocation away from Calgary,
Canada to China

Dovetail launch of global headquarters in
China

Recruit & train new employees
for overseas deployment

Sending new employees with senior management
supervision to China. On job training with locals



CHINA

Invest with NEIS

Invest with Nahai

Continued investments. Possible Diversifications to Pharmaceutical

Hiring, Training & Establishing Facilities

Exploration of other markets in the region

CANADA

Resource allocation from Calgary

Dovetail launch of global headquarters in China

Expand into Indian market

Recruit & train new employees for overseas deployment

Market research into potential markets, liaison with local governments, etc.



SIMON FRASER UNIVERSITY
THINKING OF THE WORLD



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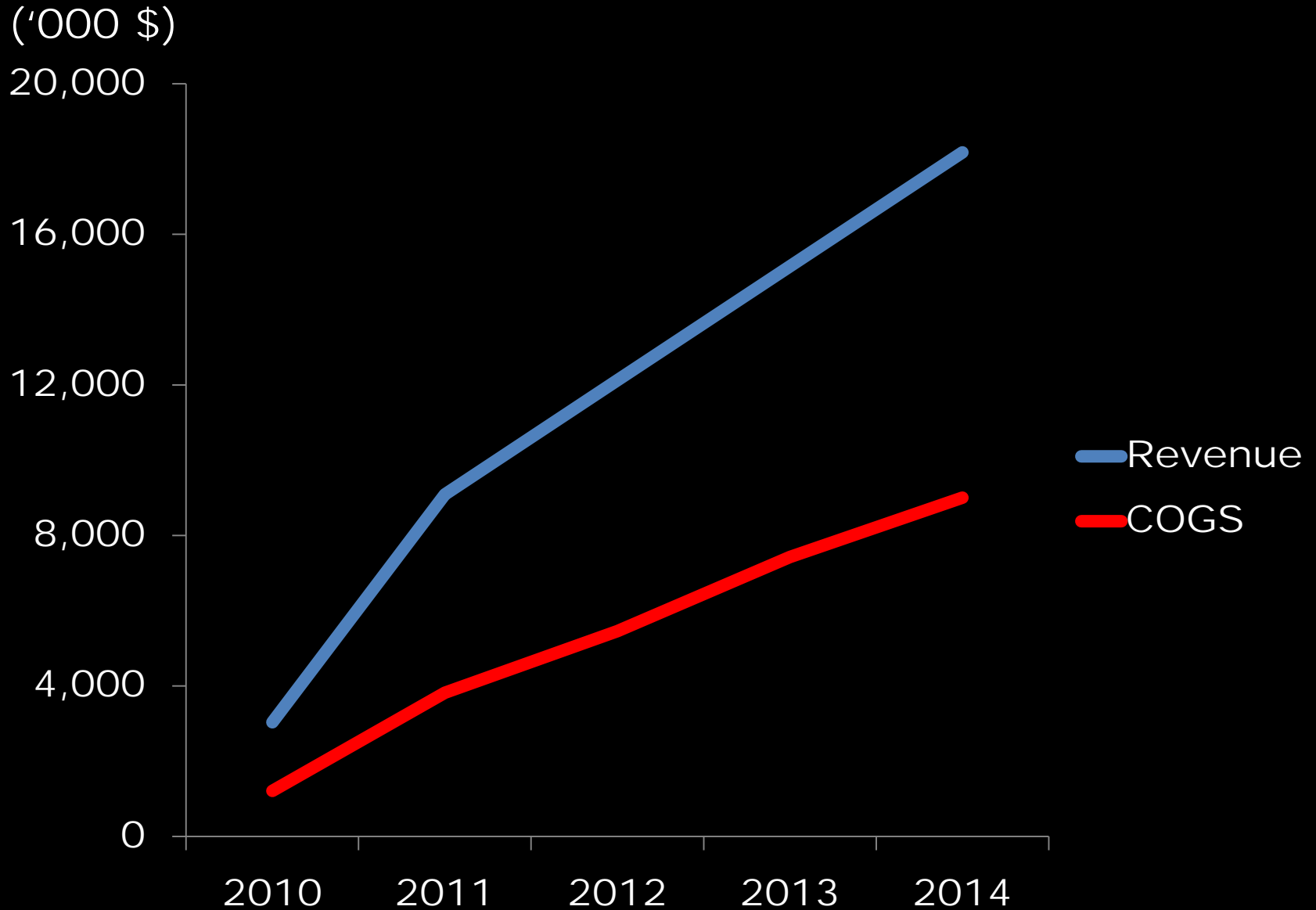
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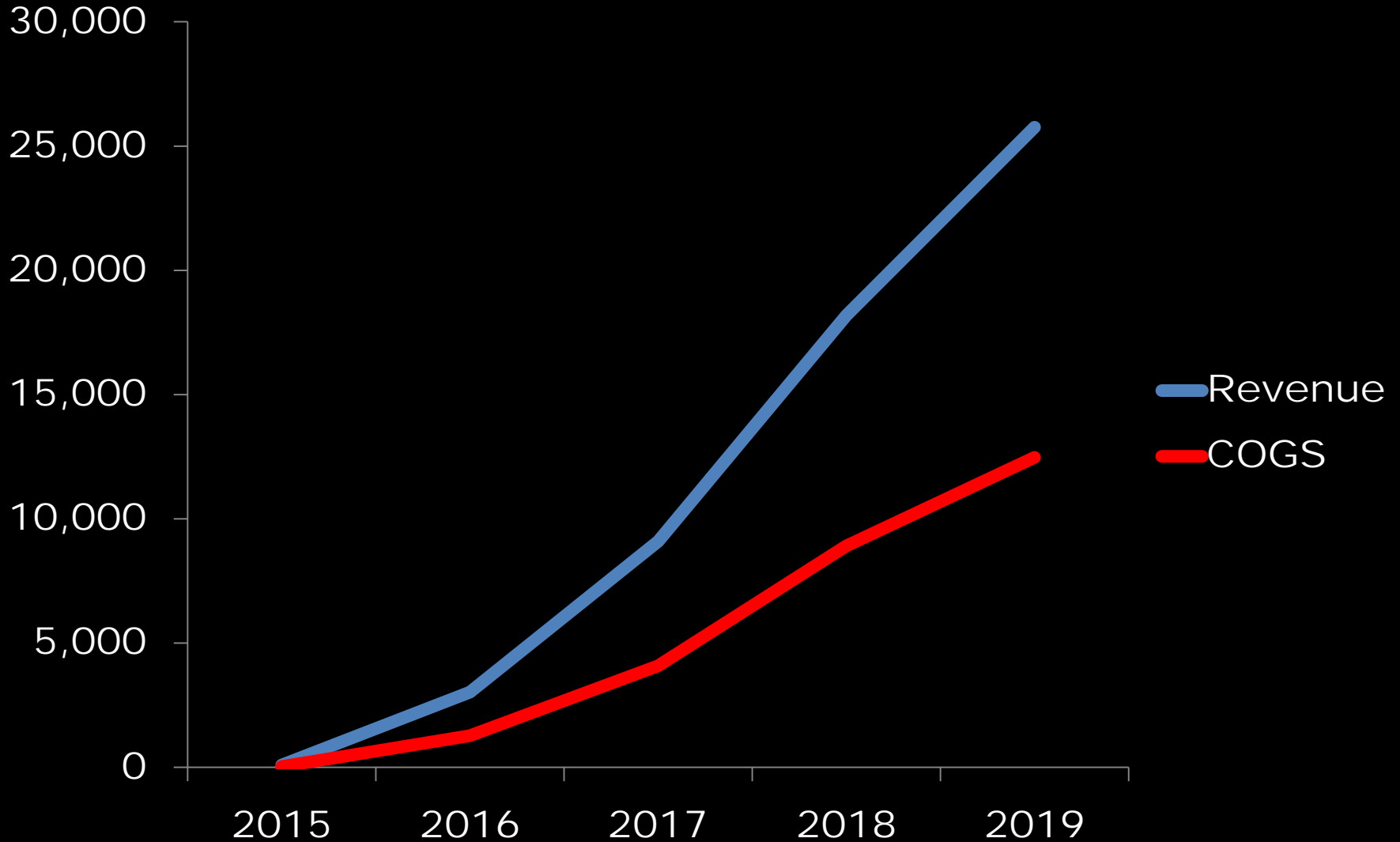


Revenue & COGS each year for NEIS POP operation



Revenue & COGS each year for oil sludge operation

('000 \$)



Positive Free Cash Flow after 2010

(In 000's)	2010	2011	2012	2013	2014
Free Cash Flow (\$)	(1,591)	3,963	5,075	5,953	7,108

Positive Free Cash Flow after 2015

(In 000's)	2015	2016	2017	2018	2019
Free Cash Flow (\$)	(2,781)	2,104	6,319	11,873	16,728

Net Present Value

NEIS JV = \$13.97mil

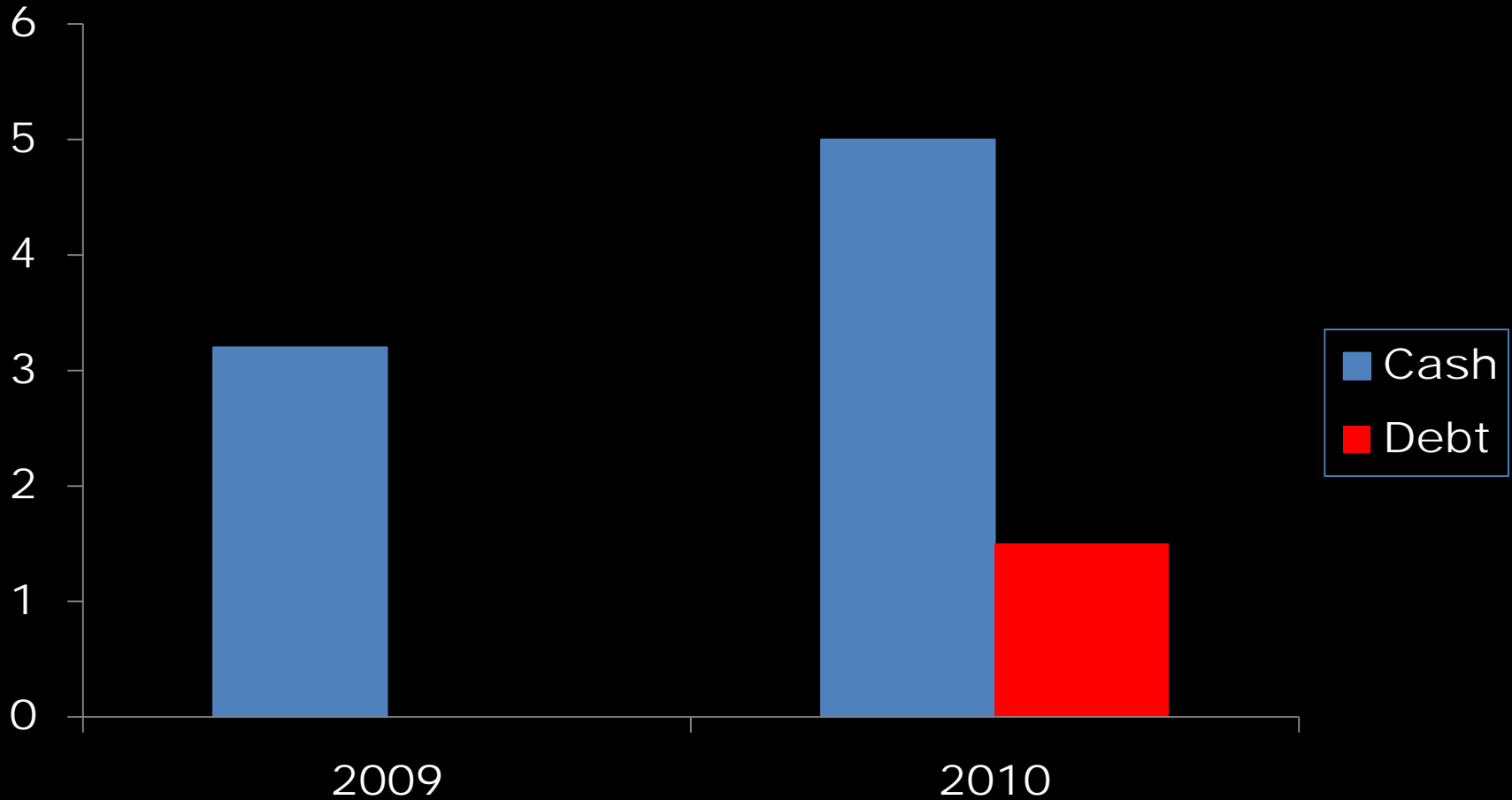
Nahai JV = \$13.78mil

Source of funding

- Cash Balance \$7.4 million
- No long-term debt on B/S
- Need \$1.5 million for NEIS JV
- Need \$1.8 million for Nahai JV

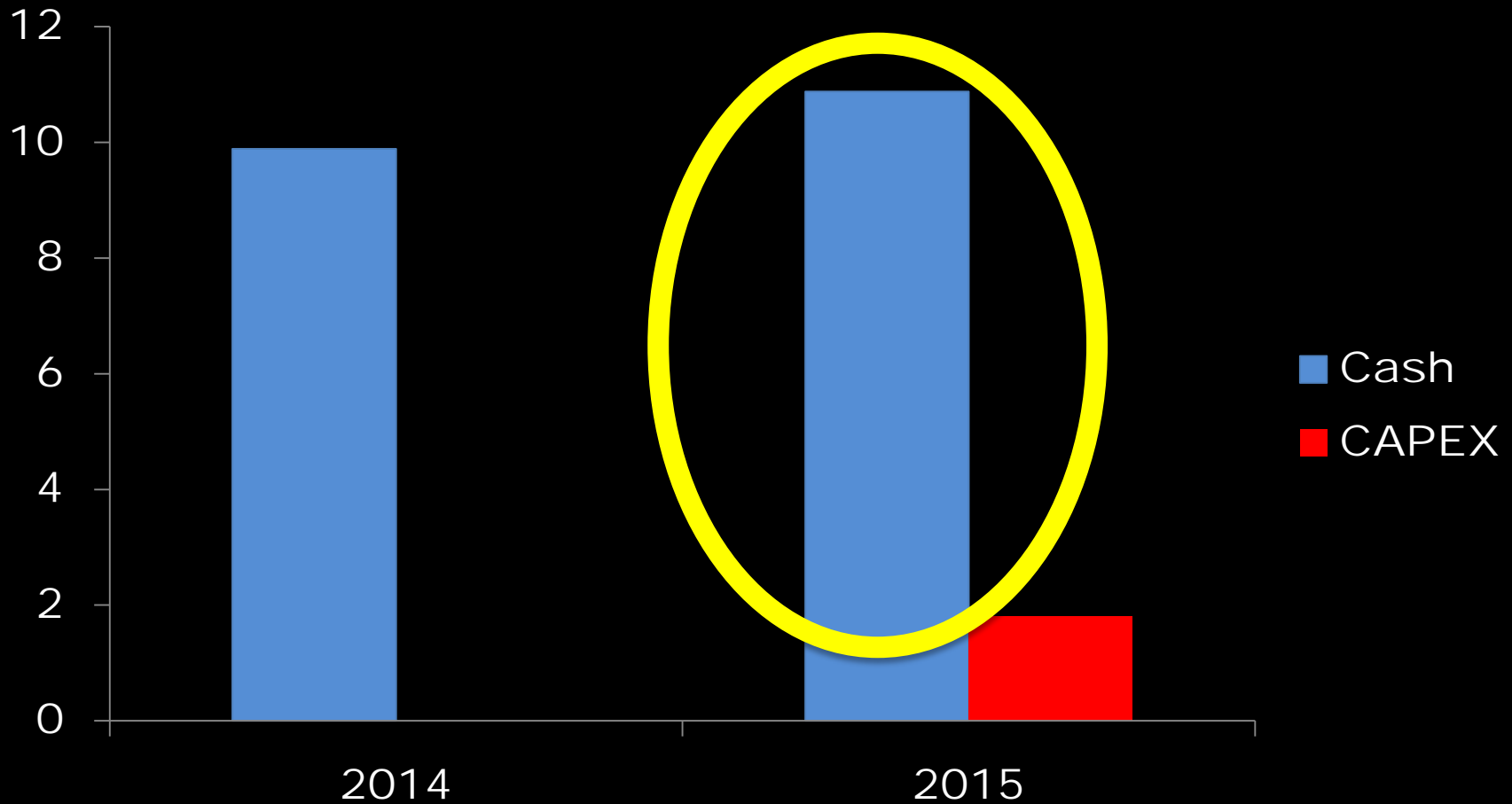
Financial Position in 2010

(Million \$)



Cash-only Investment with Nahai

(Million \$)



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Partner with **NIES**





then Nahai

50:50 Contractual Based JV
with NIES

60:40 Contractual Based JV
with Nahai

Thank You



Q & A

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What

SWOT

Regulations

JV

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Miscellaneous

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Hofstede

Country Attractive

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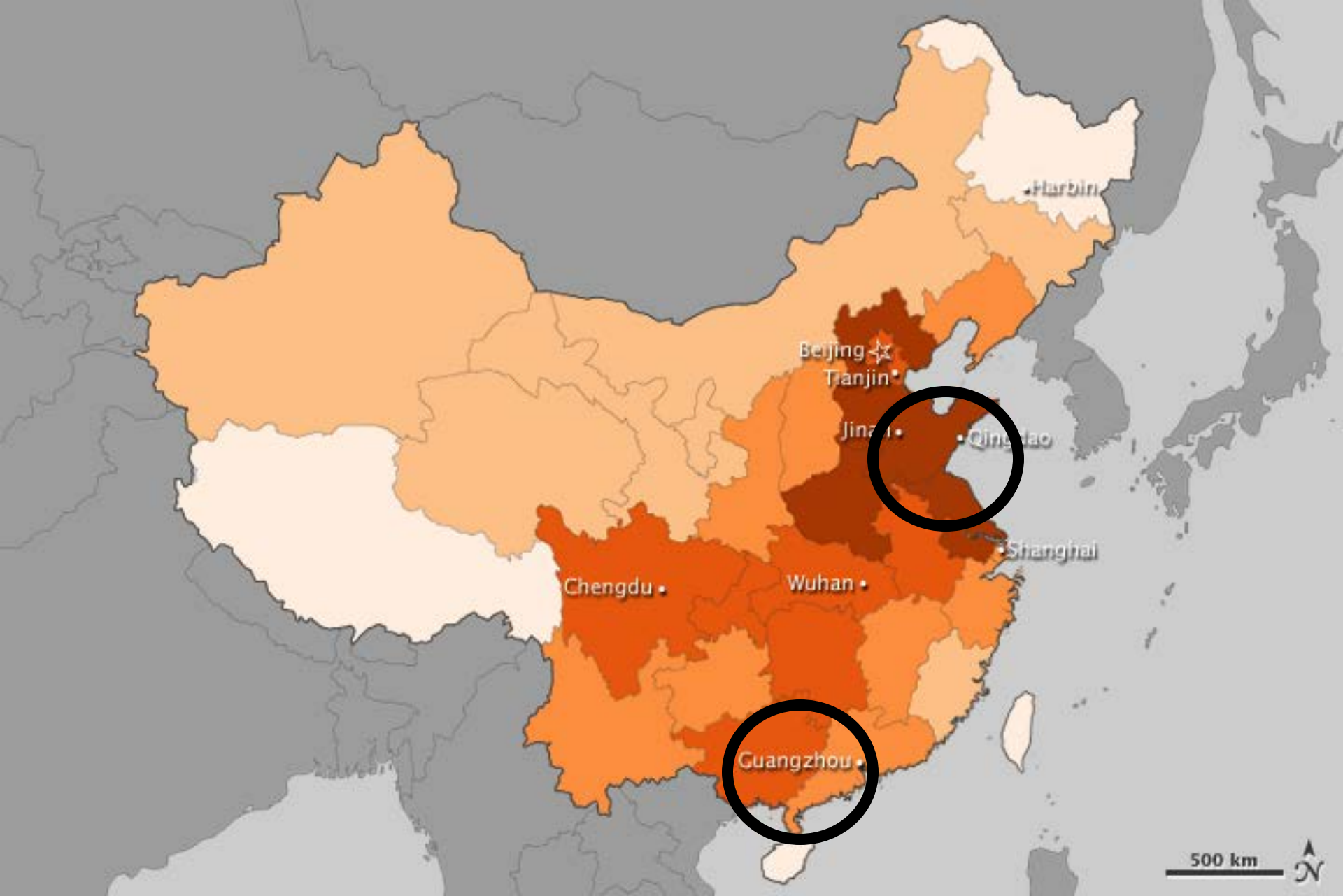
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HR

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TPS unit

Comp Strategy



for relevant key release sources in China

(1) Wastes incineration

Domestic wastes incineration	Little application	Development and application
Hazardous wastes incineration	Little application	Development and application
Medical wastes incineration	Little application	Development and application
Sludge incineration	Little application	Preliminary stage
Cement kiln burning hazardous wastes	Little application	Development and application

chlorine)

(3) Steel

Ironstone sinter	Little application	Preliminary stage
Steel making in electric arc furnace	Little application	Preliminary stage

(4) Regenerated non-ferrous metal

Regenerated copper	No	No
Regenerated aluminum	No	No
Regenerated zinc	No	No
Regenerated lead	No	No

(5) Funeral and interment (cremation machine)

	No	Development and application
--	----	-----------------------------

(6) Chemical industry

Production of Na-PCP	Little application	
Chlorophenol derivatives production	No	Attention
Chloranil production	Little application	
Chlorobenzene production	No	Attention
Chlor-alkali	Little application	
PVC production	No	Attention



- **3,473,600 metric tons of CO2 emissions (2nd)**
- **1.84 ecological footprint/capita (77th)**
- **2,790,000 tons/squ SO2 emissions/populated area (19th)**
- **\$193 billion on environmental cleanup in 2010 (1.39% GDP)**

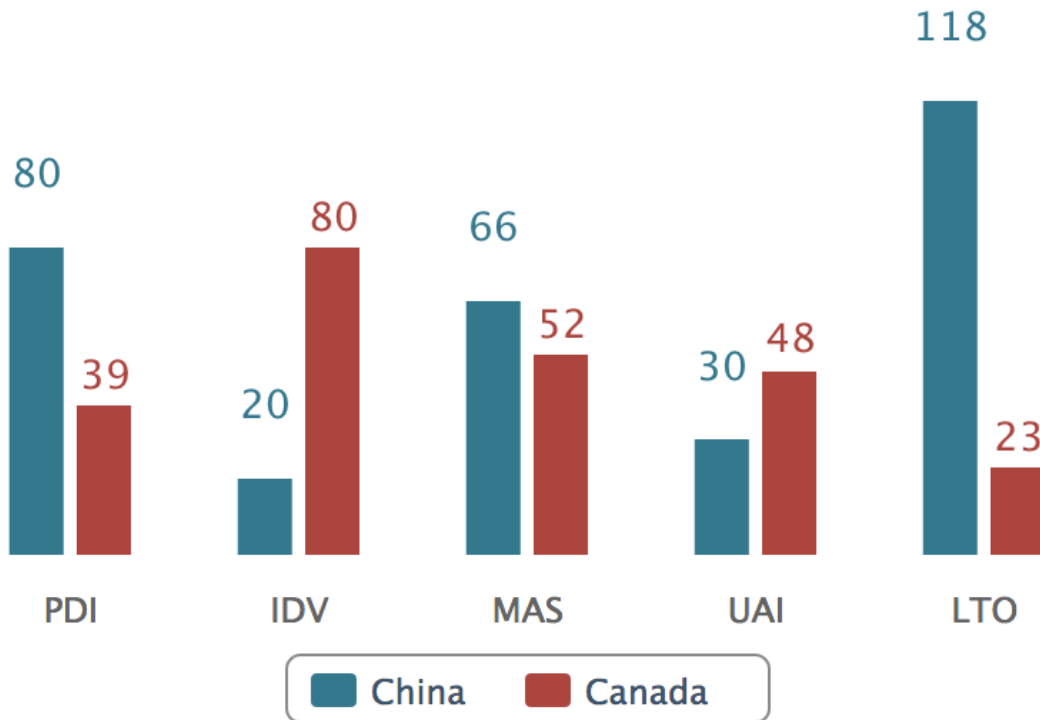


- **521,404 metric tons of CO2 emissions (8th)**
- **7.66 ecological footprint/capita (9th)**
- **2,790,000 tons/squ SO2 emissions/populated area (22nd)**
- **\$854 million on environmental cleanup in 2010 (0.05% GDP)**

Hofstede's Scale

China vs. Canada

China
in comparison with the below



Country Attractiveness Evaluation

Market Attractiveness – factors such as:

- Gross domestic product (GDP) per capita and growth
- General income levels and disposable income levels (Price)
- Competitors already in the marketplace
- Specific Consumer or B2B spending indicators for Products
- Country sentiments about country of origin

Political, Legal and Financial environment such as:

- Trade Barriers- tariffs, licenses, FDI restrictions, JV requirements
- Political Stability, Currency stability and inflation controls
- New Business start up processes and length of time
- Intellectual Property Protection or Corruption indicators

Marketing Infrastructure

- Distribution (Place)
- Promotions/Advertising/Sales Force

Company Fit with Country through factors such as:

- Cultural Fit
- Geographic proximity to existing operations
- Company Specific parameters (minimum locations, brand control)
- Company policy regarding staffing (Expats, Foreign Nationals, etc.)

Attractiveness Table Example

<u>Country/Weight</u>	<u>GDP per person</u>	<u>GDP Growth</u>	<u>Time req. to start business</u>	<u>Govt. Corruption (10= clean)</u>	<u>Rank</u>
Brazil	\$5,659	2.30%	152 days	3.7	
score	8	3	3	6	4.8
Russia	\$6,932	6.40%	28 days	2.4	
score	9	6	8	4	7.1
India	\$816	9.20%	35 days	2.9	
score	3	9	7	5	6.4
China	\$2,034	10.20%	35 days	3.2	
score	6	10	7	6	7.8
USA benchmark	\$44,150	3.20%	5 days	7.6	

Strengths:

- ✓ Innovative
- ✓ Strong leadership
- ✓ Forward-thinking
- ✓ Technical expertise

Weakness:

- ✓ Small-sized firm
- ✓ Limited specialized workforce
- ✓ Low market cap
- ✓ Steep domestic comp.

Opportunities:

- ✓ Expansion into a major global market
- ✓ Relationships with potential partners
- ✓ Increased emphasis on environmental protection

Threats:

- ✓ Susceptible to market forces
- ✓ Potential dilution of Intellectual Property



Strengths:

- ✓ Federal enforcement agency
- ✓ Regulatory power

Weakness:

- ✓ Potential bureaucracy within government agency
- ✓ Working with government agency could be subjected to political climate

Opportunities:

- ✓ Potential liaisons with other provincial enforcement agency

Threats:

- ✓ Potential renege without remuneration
- ✓ State officials and workers may have little or no motivation to exceed performance



Zhoushan Nahai Solid Waste Central Disposal Co

Strengths:

- ✓ Existing facilities
- ✓ Similar corporate culture with existing firm
- ✓ Forward thinking leadership

Weakness:

- ✓ High risk of dilution of *Intellectual Property*
- ✓ *Uncertainty of host country*

Opportunities:

- ✓ Potential liaisons with affiliates
- ✓ Perpetual revenue with high probability of increased reports

Threats:

- ✓ Operating in the host country (China) court of law
- ✓ Potential disputes unresolvable

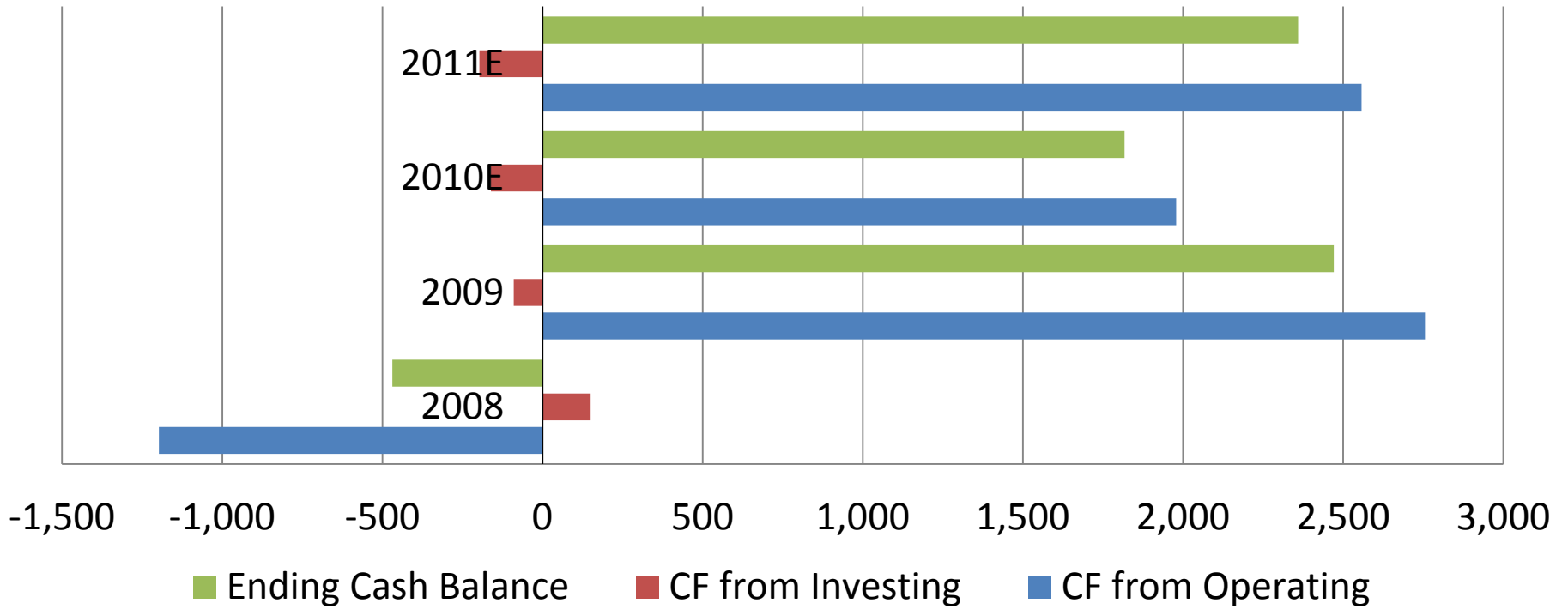


STOCK PRICE ANALYSIS



Expanding into the Chinese market would create \$3.76Million worth of equity for shareholders

CASH FLOWS ('000)



Net Present Value for NEIS JV

(In 0000's)	2010	2011	2012	2013	2014
Revenue	3,030	9,090	12,120	15,150	18,180
COGS	(1,212)	(3,817)	(5,454)	(7,423)	(8,999)
Depreciation	(454)	(909)	(1,363)	(1,818)	(2,272)
EBIT	1,363	4,363	5,302	5,908	6,908
Taxes @30%	(409)	(1,308)	(1,590)	(1,772)	(2,072)
NI	954	3,054	3,711	4,135	4,835
Add Dep.	454	909	1,363	1,818	2,272
CAPEX	(3,000)				
FCF	(1,591)	3,963	5,075	5,953	7,108
PV @10%	(1,591)	3,725	3,813	4,066	4,413
NPV	13,977				

Net Present Value JV with Nahai

(In 0000's)	2015	2016	2017	2018	2019
Revenue	90	3,030	9,090	18,180	25,755
COGS	(36)	(1,272)	(4,090)	(8,908)	(12,748)
Depreciation	(600)	(600)	(600)	(600)	(600)
EBIT	(545)	1,157	4,399	8,671	12,406
Taxes @30%	(163)	(347)	(1,319)	(2,601)	(3,721)
NI	(381)	1,504	3,711	11,273	16,128
Add Dep.	600	600	600	600	600
CAPEX	(3,000)				
FCF	(2,781)	2,104	6,319	11,873	16,728
PV @10%	(2,781)	1,739	4,747	8,109	10,386
NPV	13,785				

Evaluation criteria & definitions:

The following criteria are used in evaluation:

- **Financial short-term** – will the alternative create a high short-term ROI?
- **Financial long-term** – will the alternative create a good long-term ROI?
- **Competitor's response** – how will the market react to our strategies?
- **Conduciveness of market place** – does the market allow our strategies to work?
- **Risk** – will the alternative have a better chance to succeed?
- **Synergy** – will all partners corroborate well together?
- **Cash Flow** – will it affect the cash on hand of the company?

Law on the Prevention and Control of Environmental Pollution by Solid Waste

The principle of “**the one who polluted shall treat**”

- If companies refuse to clean contaminated sites, country level EPA can appoint others to conduct proper treatment and the **cost** is **borne by the responsible units** or individuals

The PRC NIP for the Stockholm Convention on POPs

http://www.pops.int/documents/implementation/nips/submissions/China_NIP_En.pdf

Chinese Regulatory Environment for Pollution

2004: **HCB** production and use banned.

2007: the **total amount** of releases of **POPs** was on the **increase** in China.

2009: Banned the production and use of **Chlordane**, **Mires** and **DDT**.

Implications of the Chinese Regulatory Environment

Favorable for PS2's business in China

Recent ban on toxic substances

➡ Opportunity for **future** potential market

Tightening regulation by the government

➡ Creates more **demand** for our service

Increasing Pollution in China

➡ **Increases** the market size

Governmental Policies for Foreign Investments

1. The National Medium- and Long- Term Plan for the Development of Science and Technology
 - I. China's Indigenous Innovation Policy

China's Indigenous Innovation Policy

Goal: “To advance China to the forefront of technological leadership in terms of LEADERSHIP”

Chinese ministry announced . . .

- +National Catalogue
- +Favors local companies
- +Linking government
procurement market



Intellectual Property Rights

- Foreign companies must own IP rights
- Prompting of technological secret revealing



Joint Ventures

- Split equity of Company
- Sharing of Resources



Government Procurement Market

- National Catalogue
- Lifted links + Ongoing Effects

Competitor's Analysis



- Incineration Technology
- Market capitalization at **\$81million**
- **80,000 tons** capacity. **4x** of PS2 capacity
- BEV has been seeking opportunities to divest into other markets. Currently only in Canada.
- Diversified into treatment of contaminated construction debris
- Currently operating in the United States market, PS2 has not done so

Competitor's Analysis



BEAUDIN



- Thermal Desorption Unit (TDU)
- Consortium recently won a bid with the World Bank at **\$3.7million in 2009**
- Operates at a **higher capacity (2-3tons/hour)** at a fixed location. No mobile unit
- No further information about successful implementation on TDU specifications
- Biggest and direct competitor in the Chinese market



Nega Macs

Alignment with the Company's Strategic Goal

Geographic and Product
Diversification

