

Climate-Related Regulations (Public Driver)

- Canadian

Climate-Related Responsible Investment (Private Driver)

- Mega Trend
- Major Players: CDP; PRI (Principles of Responsible Investment); and others.

Climate-Related Financing (Risks and Opportunities)

- Climate-Related Investment Risks – Stranded Assets
- Climate-Related Investment Opportunity – Clean Energy

Where is the Financing Going to Come From?

- Climate-Related Investment Opportunity - Carbon Markets (Commodities)
- Climate Related Investment Opportunity - Green Bonds (Fix Asset)

Why is it Important?

- Risk vs. Reward

Regulatory Markets – Canadian (Public Driver)

Regulatory Attribute	Canada Federal	Western Climate Initiative	AB	BC	QC	ON	MB	SK
Regulatory Initiative	GHG Reporting Program Section 46 of Environmental Protection Act	Per Jurisdiction	CC Emissions Mgmt Act & Specified Gas Reporting Regulation	Bill 18 GHG Reduction Cap & Trade Act Bill 42 GHG Reduction Targets Act	Q-2 Section 31 and ss 2.2 109.1 and 124.1 (Amendment to Env Quality Act)	O.Reg. 452 EPA Amendment (GHG ETA) 2009	Bill 213 – GHG Emissions Reporting Act (No Facility Reports)	Bill 126 - Management and Reduction of GHG Act – May Link to AB
Reporting Threshold (kiloTonnes CO2e) – Note various exclusions	50	10	50	10	10	25	Pending	50 (draft)
Cap & Trade Threshold (kilotonnes CO2e)	NA	25	50	25	25	25	Pending	50 (draft)
Verification Threshold (kilotonnes CO2e)	Voluntary	Per Jurisdiction	50	25	25	25	Pending	50 (draft)
Reporting Deadline	June 1 st	Per Jurisdiction	March 31 st	March 31 st	June 1 st	June 1 st	Pending	March 31 st
Verification Criteria	Self	ISO 14064 & 5	15064-3 or ISAE 3000	ISO 14064 & 5	ISO 14064 & 5	ISO 14064 & 5	Pending	15064-3 or ISAE 3000 (Draft)
Verification Deadline	None	Per Jurisdiction	March 31 st	March 31 st	Sept 1 st (2012)	September 1 st	Pending	March 31 st
Validation of Offset Projects	NA – No Cap & Trade	Per Jurisdiction	No	Yes	Yes	Cap & Trade Rules Pending	Pending	No (Draft)
Level of Assurance	Assurance is Optional	Per Jurisdiction	Upgraded to Reasonable in 2012	Reasonable	Reasonable	Reasonable	Pending	Reasonable (Draft)

Responsible Investment – Focus on Climate Change (Private Driver)



Principles of Responsible Investment (PRI) - Profile



NUMBER OF INVESTORS SIGNING CLIMATE DECLARATIONS

	2009	2010	2011	2014
Number of institutions	180	259	285	364
Assets held or managed (\$ billion)	13 000	15 000	> 20 000	> 24 000

The Institutional Investors Group on Climate Change (IIGCC), Ceres' Investor Network on Climate Risk (INCR), the Investor Group on Climate Change (IGCC), the Asia Investor Group on Climate Change (AIGCC).

Climate-Related Investment Risks - Stranded Assets

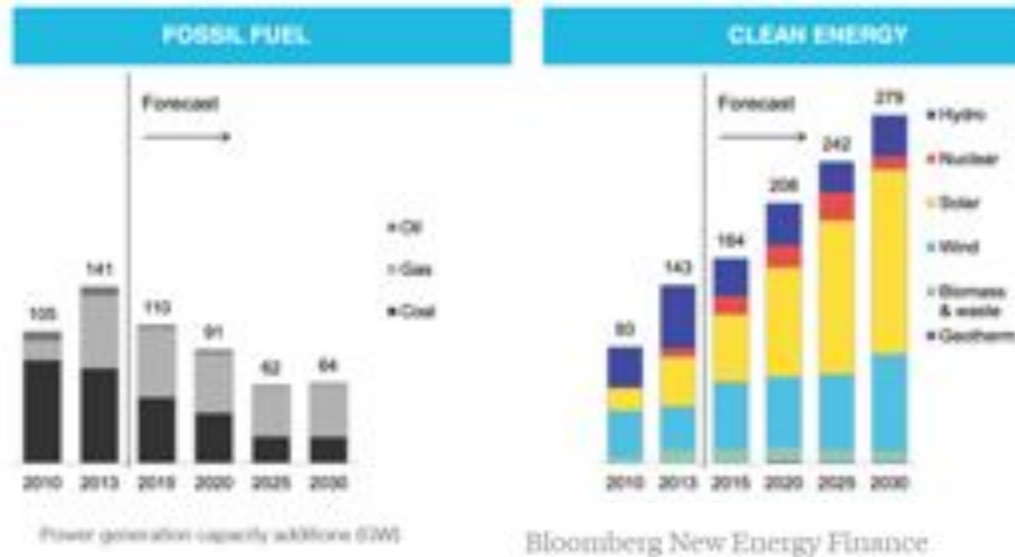
What is a Stranded Asset? “An asset that is worth less on the market than on a balance sheet due to obsolesces or other risk factors.”

- **Between 60-80% of coal, oil and gas reserves of publicly listed companies are ‘unburnable’ if the world is to have a chance of not exceeding global warming of 2°C.** ¹
 - ❑ Potential impact estimated to be USD28 Trillion of fossil-fuel revenue.²
- **Lord John Brown (Former BP CEO) “Many oil and gas companies are still in denial about climate change because “they do not want to acknowledge an existential threat to their business.”**
 - ❑ April 17, 2015; 98% Shareholders and BP’s Board of Directors support resolution to be more transparent on risks posed by climate change.
 - ❑ April 22, 2015; Vancity Investment Management announced they have started to divest from oil and gas and shift toward renewable and clean technology.
- **Sheikh Zaki Yamani, former Saudi Oil Minister “The Stone Age did not end for lack of stone, and the Oil Age will end long before the world runs out of oil,” June 25, 2000!**
 - ❑ “Thirty years from now there will be a huge amount of oil - and no buyers. Oil will be left in the ground.”

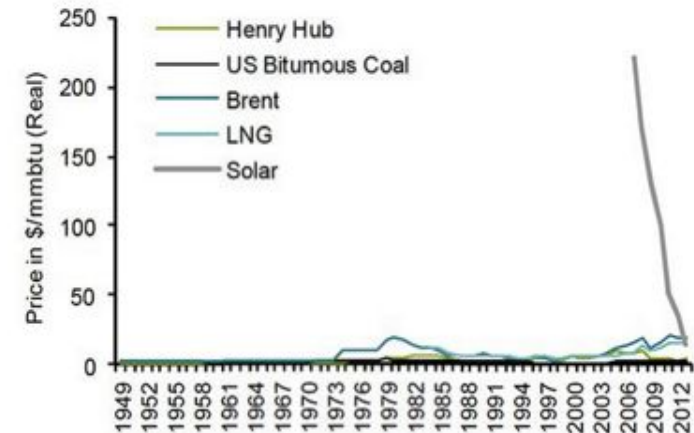
1. Carbon Traker, Unburnable carbon, 2013

2. Kepler Cheuvreux, Stranded assets, fossilized revenues, 2014

Climate-Related Investment Opportunity – Clean Energy

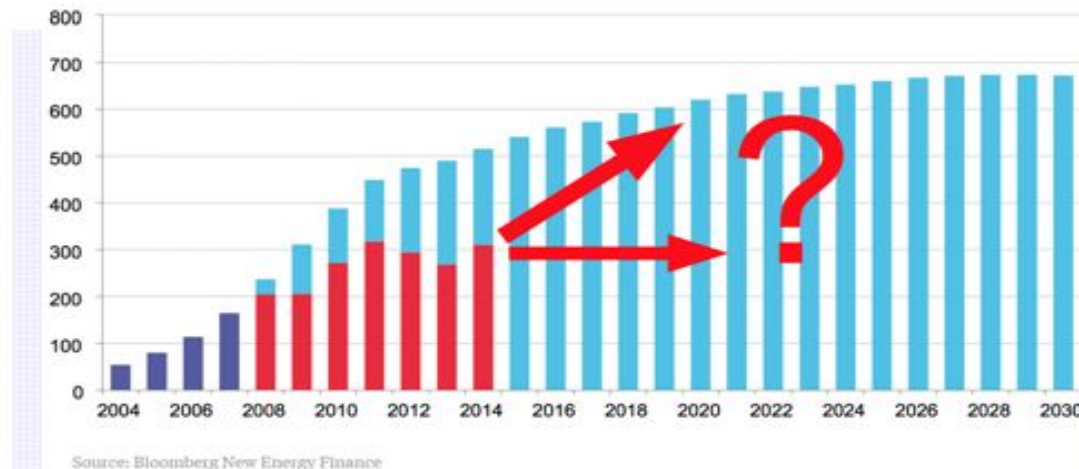


Welcome to the Terrordome...



Source: Bernstein Research. Data: EIA, CIA, World Bank, Bernstein analysis

Investment Needed to Minimize Climate Change



Caveats

- Costs for Clean Energy vary by location.
- Demand for total fossil fuels, especially Nat. Gas, is expected to grow significantly in developing countries – but at what price (supply)?

Climate-Related Investment Opportunity – Carbon Markets Map 2015



By 2017, over 50% of the population in Canada and the U.S. will likely be under some form of carbon pricing. Same for the rest of the world.

Climate-Related Investment Opportunity – Carbon Markets



IETA
INTERNATIONAL EMISSIONS
TRADING ASSOCIATION

Emissions Trading Targets and Timetables

	Timetable	Target	Coverage		Timetable	Target	Coverage
EU	2005 - 2020	20% below 1990 levels by 2020	11,500 installations 40% of Total Emissions	Australia	2013 - 2020	5% below 2000 levels by 2020 (Higher targets conditional on global agreement)	Energy, Industrial Process, Commercial Transport, 60% of Total Emissions
Alberta	2007-Present	Annual intensity reduction of 12% below baseline	All industrial facilities	China	2013 - 2020 (National from 2015)	Intensity reduction of 40-45% below by 2020	Differs between pilots; National coverage unclear
New Zealand	2008 - 2020	10-20% below 1990 levels by 2020	Forestry (2008); Energy Fuels and Industrial (2010); Waste and Synthetic GHGs (2013)	Kazakhstan	2013-2020	7% below 1990 levels by 2020	Oil and gas; power; Mining and Metals; Chemicals; others being considered
RGGI	2009 - 2018	10% below 2014 levels by 2018	Power Sector	Switzerland	2013-2020	20% below 1990 levels by 2020 (Higher targets conditional)	950 companies across multiple sectors
India	PAT Scheme: 2012-2015	20-25% intensity reduction below 2005 levels by 2020	Power, thermal, iron and steel, fertilizers, textiles, aluminum, pulp and paper, chlor-alkali	Tokyo	2013-2019	25% below 2000 levels by 2020	1400 Facilities, 20% of Total Emissions
California	2013 - 2020	Reach 1990 levels by 2020	Energy, Industrial Sources (2013); Oil and gas (2015); Reaches 85% of Total Emissions	Korea	2015 - 2026	30% below BAU by 2020	490 Emitters, 60% of Total Emissions
Québec	2013 - 2020	20% below 1990 levels by 2020	Energy, Industrial Sources (2013); Oil and gas (2015); Reaches 85% of Total Emissions				

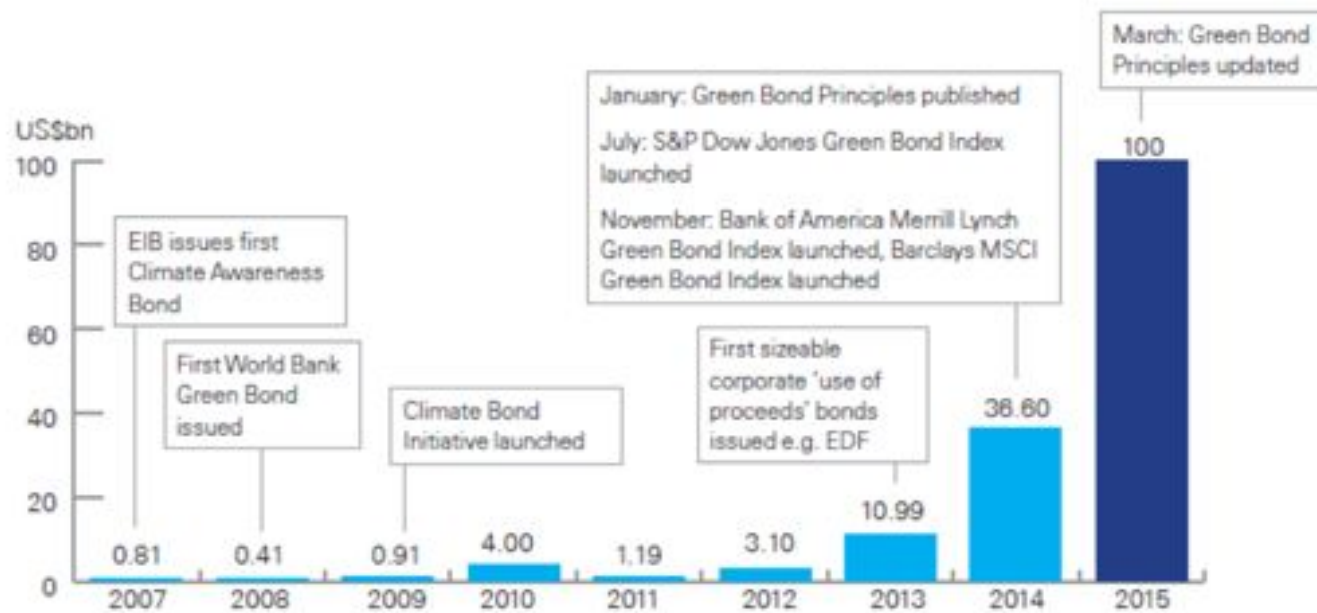
The World's Carbon Markets

A CASE STUDY GUIDE TO EMISSIONS TRADING

www.ieta.org/worldscarbonmarkets



Climate-Related Investment Opportunity – Green Bonds



Green Bond Assessment Categories

- Project Evaluation and Selection
- Use of Proceeds (within scope of “eligibility”)
- Management of Proceeds
- Reporting/Assurance

Green Bond Organizations

- Green Bond Principles
- Climate Bond Initiative/Standard
- Barleys/MSCI Green Bond Index
- Canadian Issuers: EDC; OFA; TD; North Island Hospitals;

Why Should it Really Matter? Risks vs. Rewards

	Risks	Rewards
High Carbon Intensive Investments (Status Quo)	Stranded Assets <ul style="list-style-type: none"> – Obsolescence – Write-offs 	Established Track Record <ul style="list-style-type: none"> – Proven Technology – Favorable Subsidies
	Reputational Damage <ul style="list-style-type: none"> – “Dirty” Product – Irresponsible Investment 	Economic Input/Output <ul style="list-style-type: none"> – Create Jobs – Conservative Investment
	Higher Cost of Capital <ul style="list-style-type: none"> – Cost curve keeps going up 	Higher Returns to Cover Risks
Low-Carbon Intensive Investments (Clean Tech)	Questionable Assets <ul style="list-style-type: none"> – New Technologies – Smaller Subsidies 	Intellectual Property <ul style="list-style-type: none"> – Potential Breakthroughs – Future Growth Potential
	Unknown Reputation <ul style="list-style-type: none"> – Relatively Small – Alternative Investment 	Reputational Enhancement <ul style="list-style-type: none"> – “Clean” Product – Responsible Investment
	Limited Access to Capital	Lower Cost of Capital <ul style="list-style-type: none"> – Cost curve keeps dropping

Thank you

Presentation by Phillip Ludvigsen, Ph.D.

KPMG Climate Change & Sustainability Services

pludvigsen@kpmg.ca; 416-777-3049



cutting through complexity

KPMG CONFIDENTIAL

The information contained herein is of a general nature and is not intended to address the circumstances of any particular individual or entity. Although we endeavor to provide accurate and timely information, there can be no guarantee that such information is accurate as of the date it is received or that it will continue to be accurate in the future. No one should act on such information without appropriate professional advice after a thorough examination of the particular situation.

© 2015 KPMG LLP, a Canadian limited liability partnership and a member firm of the KPMG network of independent member firms affiliated with KPMG International Cooperative (“KPMG International”), a Swiss entity. All rights reserved.

The KPMG name, logo and “cutting through complexity” are registered trademarks or trademarks of KPMG International.