



DRIVING SUSTAINABLE ECONOMIES

Can XBRL tagging improve climate risk disclosure in SEC filings?

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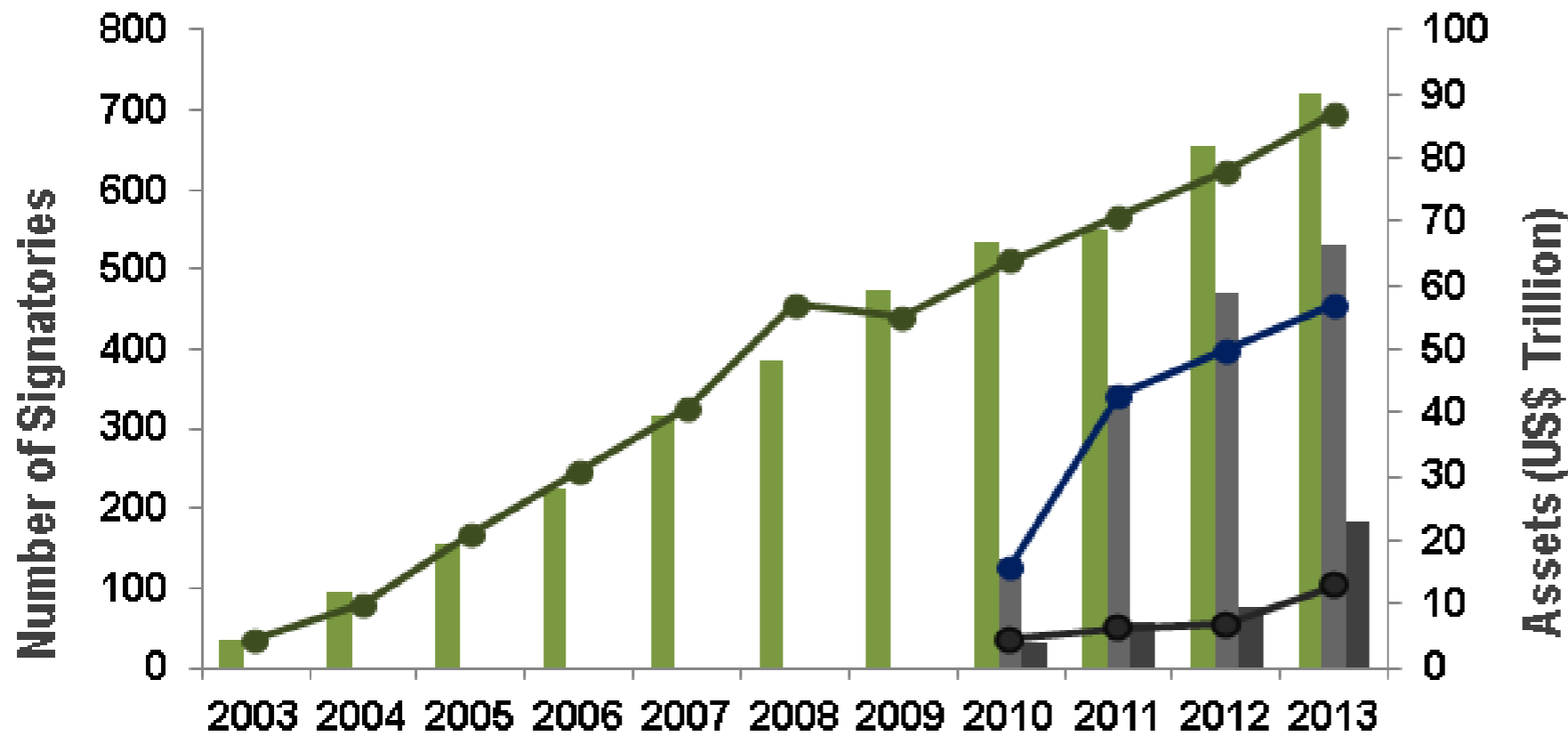
18 April 2013

Agenda

1. Climate risk disclosure
 - Investor demand
 - SEC climate disclosure guidance
 - CDP data and taxonomy
2. Analysis of SEC climate disclosures
 - Methodology
 - Results
3. Conclusion

Climate risk disclosure

Investor demand for climate disclosure



- Investor CDP Signatories
- CDP Water Disclosure Signatories
- FFD Signatories
- Investor CDP Signatory Assets
- CDP Water Disclosure Signatory Assets
- FFD Signatory Assets

Forests

100

Number of Companies reporting via FFD in 2012

Water

340+

Number of Companies reporting via CDP in 2012

Climate change

4100+

Number of Companies reporting via CDP in 2012

Investor demand for climate disclosure



Corporate Sustainability Reporting Coalition (CSRC)



Investor Network on
CLIMATE RISK

Investor Network on Climate Risk



INTEGRATED REPORTING <IR>

SEC climate disclosure guidance



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U.S. Securities and Exchange Commission

SEC Issues Interpretive Guidance on Disclosure Related to Business or Legal Developments Regarding Climate Change

FOR IMMEDIATE RELEASE
2010-15

Washington, D.C., Jan. 27, 2010 — The Securities and Exchange Commission today voted to provide public companies with interpretive guidance on existing SEC disclosure requirements as they apply to business or legal developments relating to

Disclose on climate change where considered material:

- Costs of compliance
- Costs of legal actions;
- Investment risks;
- Impact on operations;

SEC climate disclosure guidance



- Acknowledging potentially devastating systemic weakness - unrecorded in corporate accounts & not in mainstream valuation models;
- promise of improved transparency and reduced investment risk;
- a step along the route to rule making in this area;



Corporate baby-steps

CDP data and taxonomy

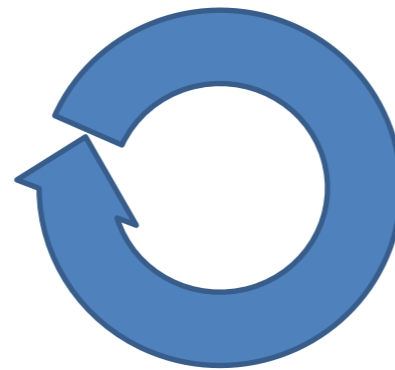
2002

Governance

Strategy + Risks
and Opportunities

Inventory data

8 questions
non-structured



2012

Generic information

Strategy

Risks and Opportunities

Governance

Management actions: targets;
performance; communications.
Future outlook

Methodology

Emissions data (S1,2&3) + break

Mandatory schemes

Assurance

14 sections
100+ questions
structured

CDP data and taxonomy



+ XBRL



CDP data and taxonomy

ID	Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact

	International agreements [member]	Air pollution limits [member]	Carbon taxes [member]	Cap and trade schemes [member]	Change in mean (average) temperature [member]
Disclosure of risks driven by changes in regulation, physical climate parameters and other climate change risks [line items]	(Abstract)	(Abstract)	(Abstract)	(Abstract)	(Abstract)
Information about climate change risks [line items]	(Abstract)	(Abstract)	(Abstract)	(Abstract)	(Abstract)
Risk description by risk driver [abstract][led disclosure]	(Abstract)	(Abstract)	(Abstract)	(Abstract)	(Abstract)
Description of driver [text block]	(No contexts defined)	(No contexts defined)	(No contexts defined)	(No contexts defined)	(No contexts defined)
Potential impact [enumeration]	(No contexts defined)	(No contexts defined)	(No contexts defined)	(No contexts defined)	(No contexts defined)
Timeframe [enumeration]	(No contexts defined)	(No contexts defined)	(No contexts defined)	(No contexts defined)	(No contexts defined)
Direct or indirect [enumeration]	(No contexts defined)	(No contexts defined)	(No contexts defined)	(No contexts defined)	(No contexts defined)
Likelihood [enumeration]	(No contexts defined)	(No contexts defined)	(No contexts defined)	(No contexts defined)	(No contexts defined)
Magnitude of impact [enumeration]	(No contexts defined)	(No contexts defined)	(No contexts defined)	(No contexts defined)	(No contexts defined)
Financial implication, cost and method for risk management activities by risk driver [text block]	(Abstract)	(Abstract)	(Abstract)	(Abstract)	(Abstract)
Financial implication of risk before action has been taken [text block]	(No contexts defined)	(No contexts defined)	(No contexts defined)	(No contexts defined)	(No contexts defined)
Methods used to manage risk [text block]	(No contexts defined)	(No contexts defined)	(No contexts defined)	(No contexts defined)	(No contexts defined)
Costs associated with actions to manage risk [text block]	(No contexts defined)	(No contexts defined)	(No contexts defined)	(No contexts defined)	(No contexts defined)

Analysis of SEC climate disclosures

Methodology

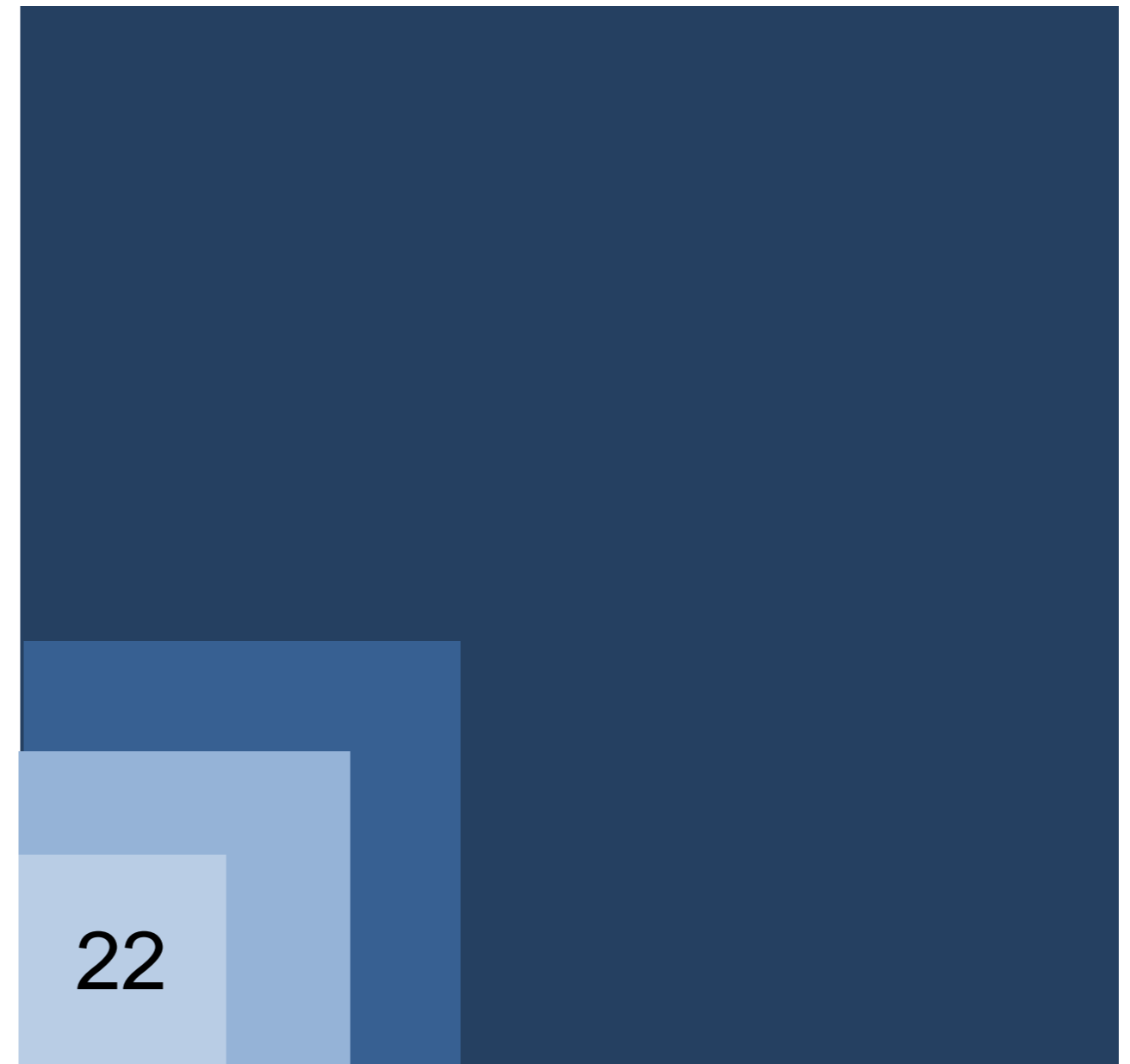
Steps followed:

- ▼ Sample definition
- ▼ SEC text extraction
- ▼ Analysis Protocol
- ▼ Data tabulation

Methodology – Sample definition

Selection criteria:

- ▼ most recent disclosure (2012, on 2011 data for CDP & SEC)
- ▼ sector with significant impact on/of climate change:
 - ▼ Oil&Gas: SIC 1311 & 2911
- ▼ public responses to CDP
- ▼ responded to risk & opp. section (CDP)
- ▼ end year check



Methodology – SEC text extraction

SEC disclosure are analysed using:

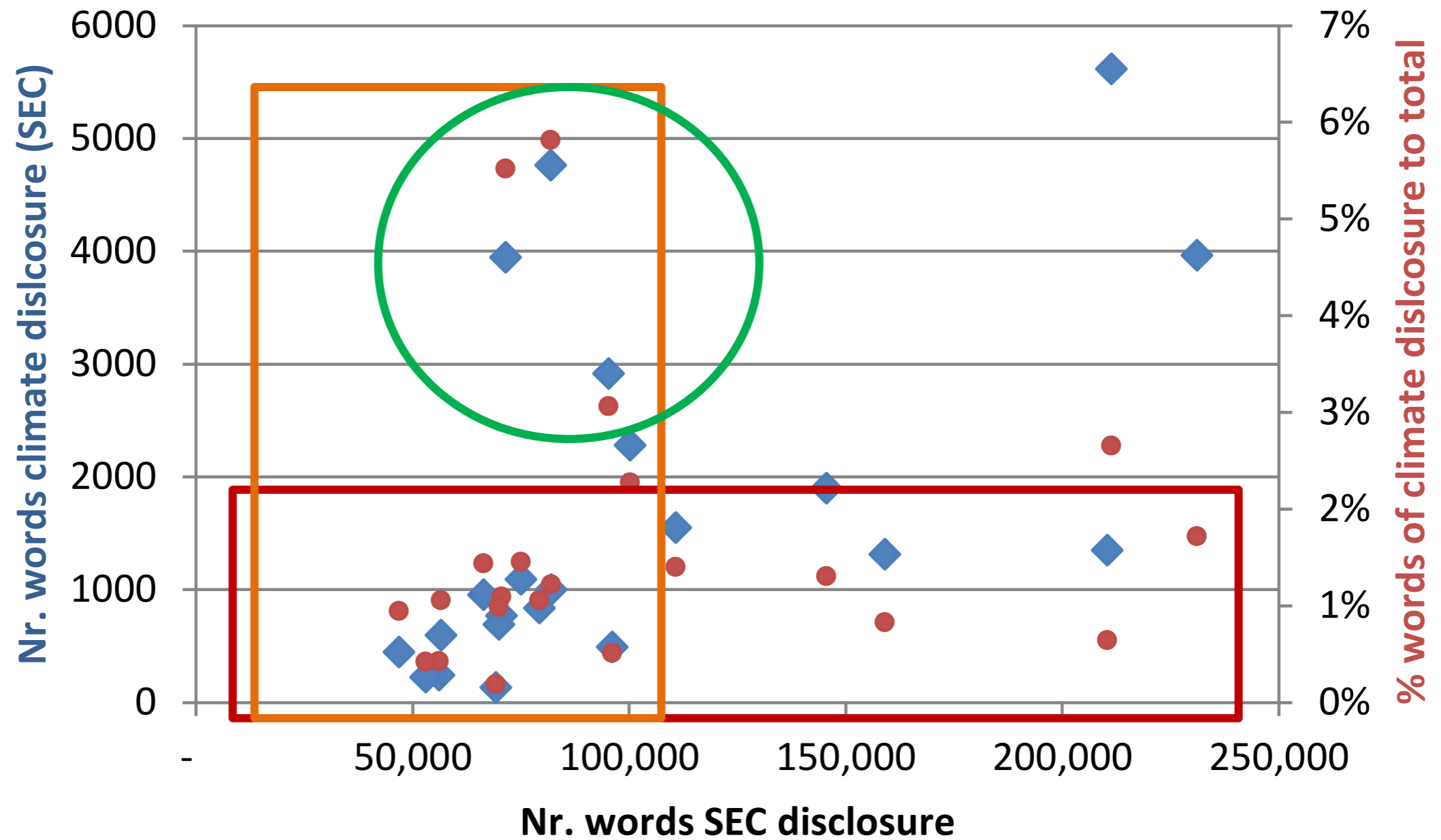
- ▼ available html 10-K's (USA) and 20-F/40-F forms in SEC website [risk disclosure not in XBRL];
- ▼ automated method to identify & analyze climate disclosures : key term search & text density analysis;
- ▼ human validation of disclosures founds (false negatives); human scanning to validate false negatives;
- ▼ text mining/checking of key climate risk terms: specific legislation or agreements; weather events; etc;

Methodology – Analysis protocol

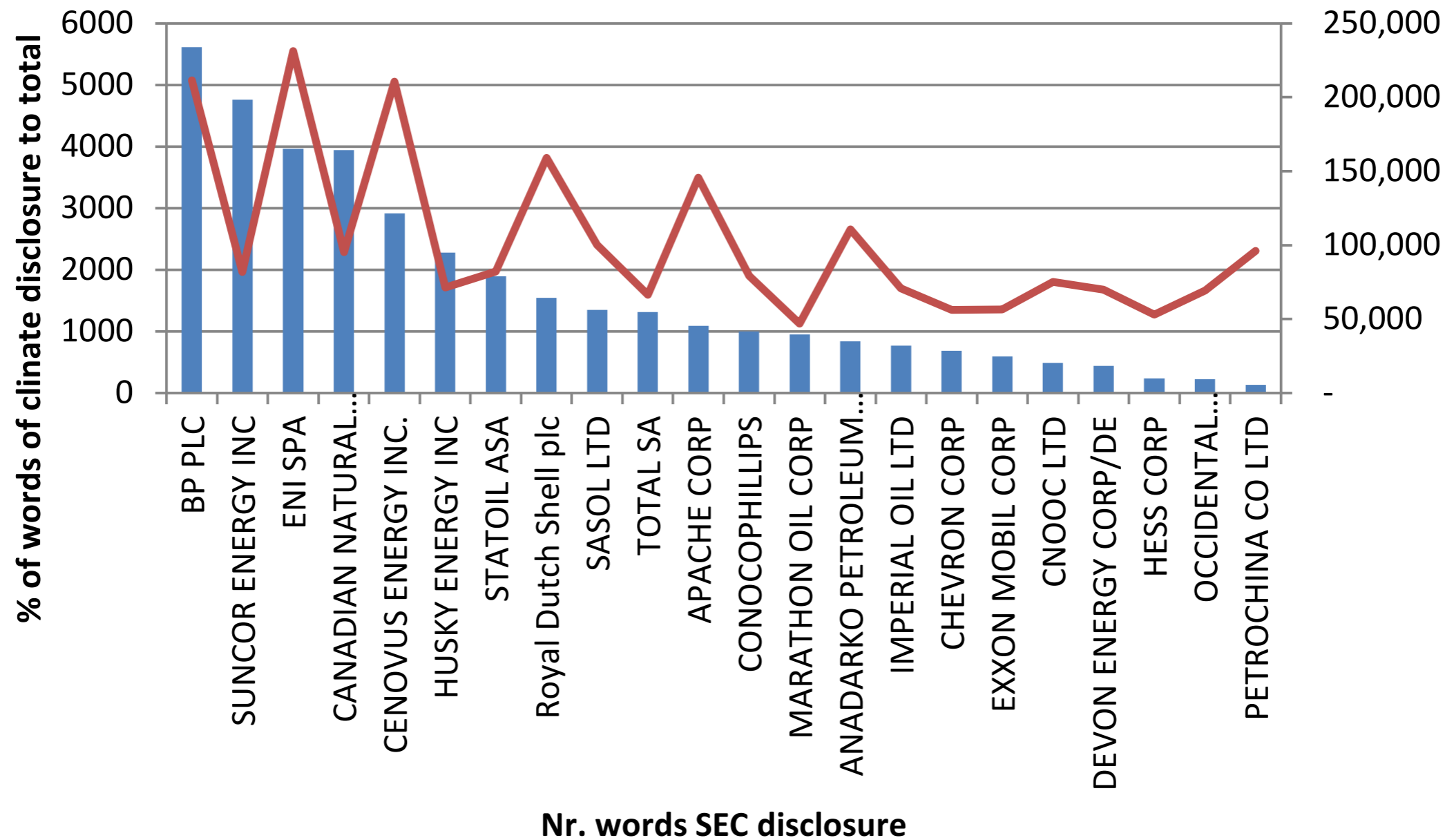
Both disclosures analyzed for:

- ▼ Volumes of information: word count («wordiness»);
- ▼ Location and «spread» of information;
- ▼ Content description:
 - ▼ type of risk (regulatory, physical; other)
 - ▼ regulatory risk: regulations referred to;
- ▼ Quality description [characterization of key aspects of risk]:
 - ▼ Likelihood
 - ▼ Impact
 - ▼ Inherent/Residual
 - ▼ Economic consequences: of risk; of mitigating risk;

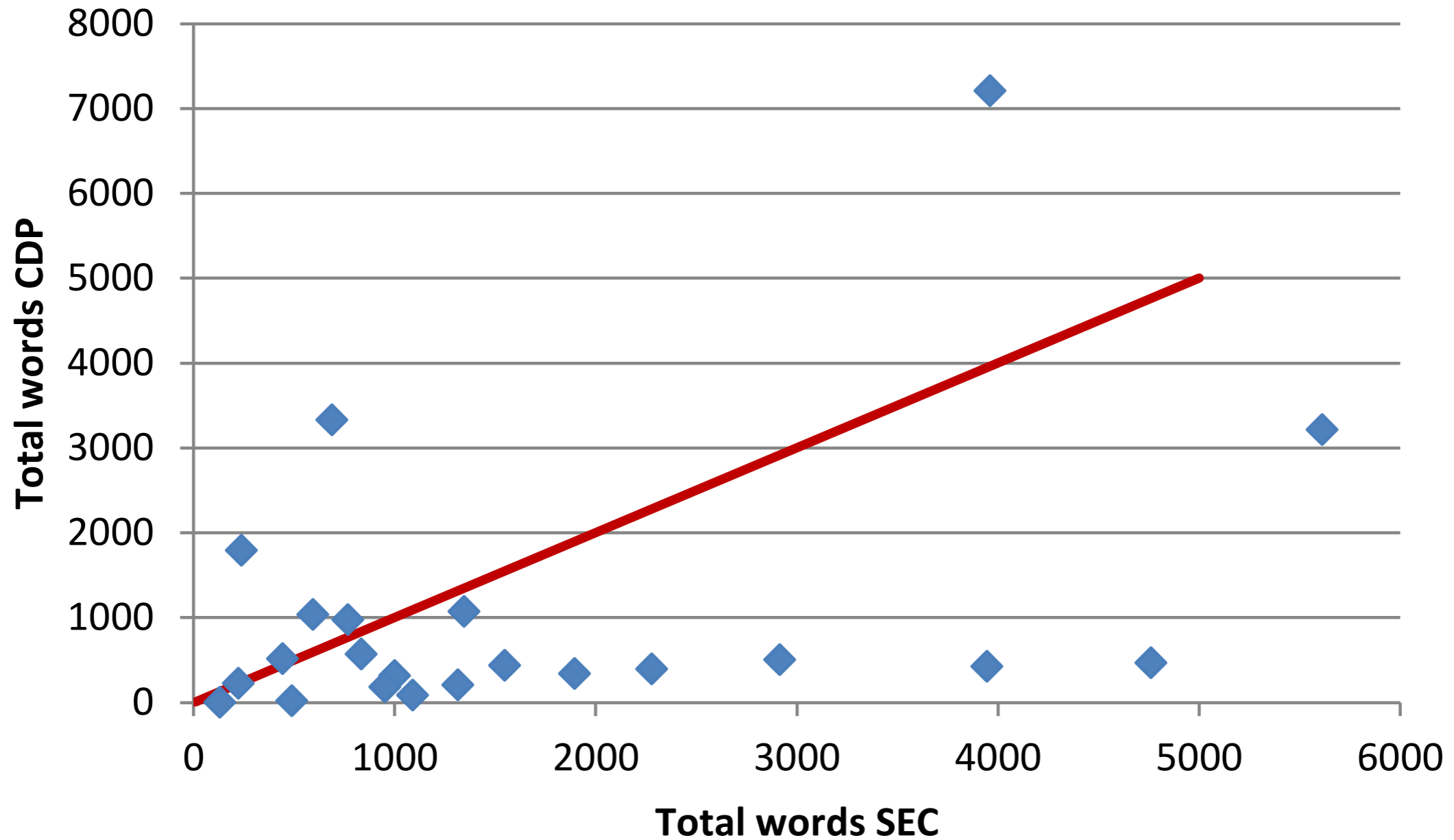
Results – Volumes of information



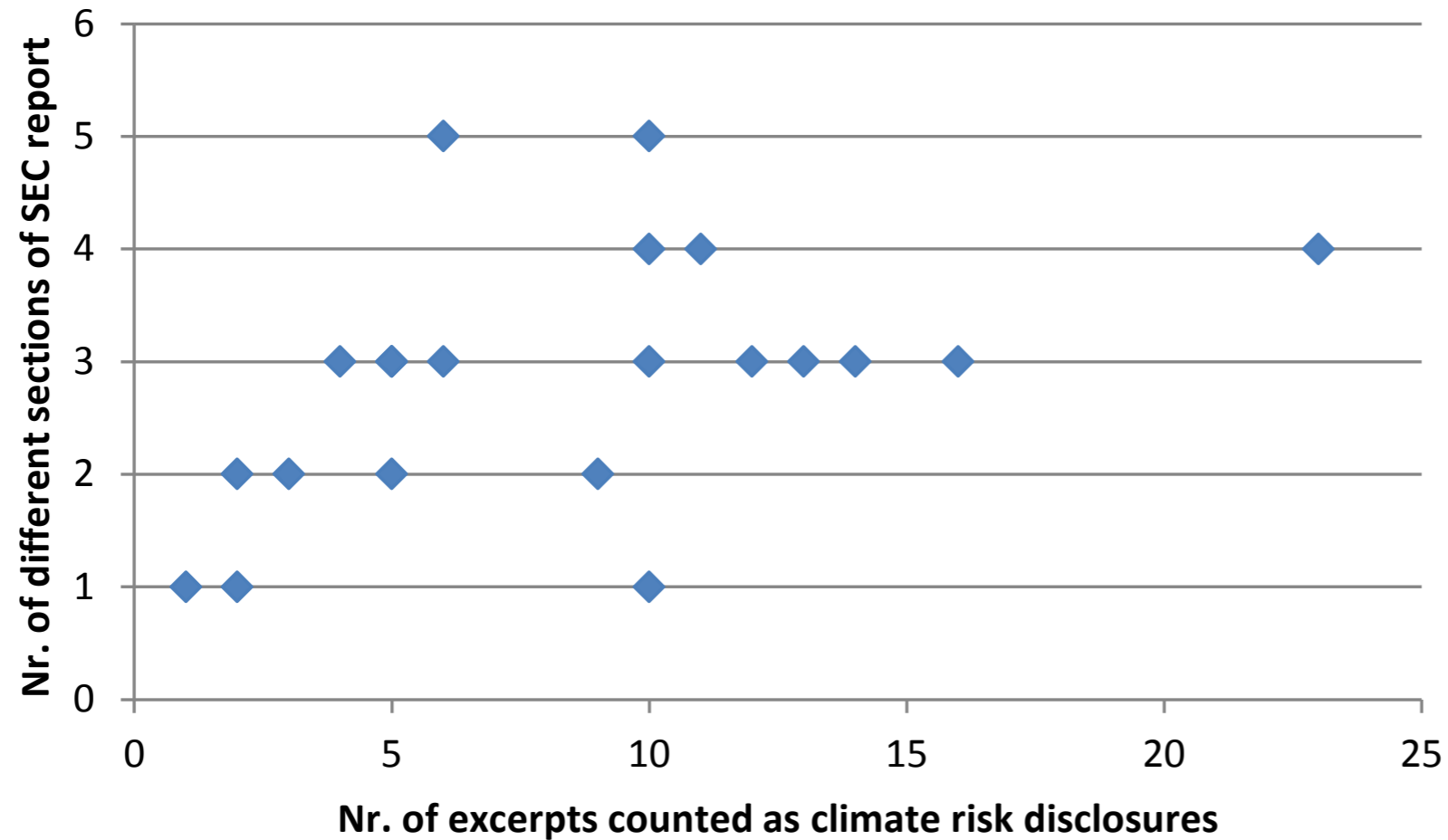
Results – Volumes of information



Results – Volumes of information

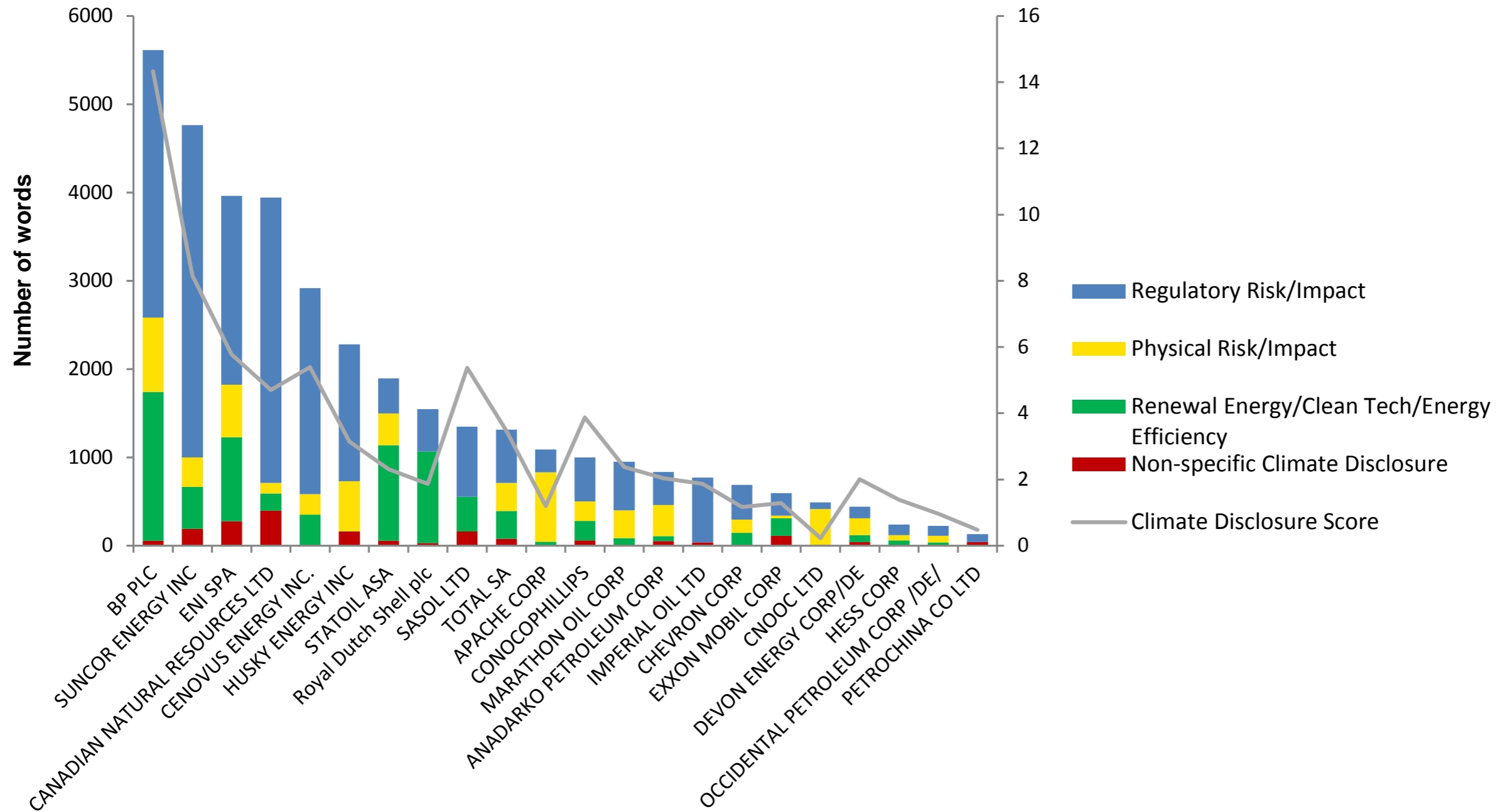


Results – Location and spread

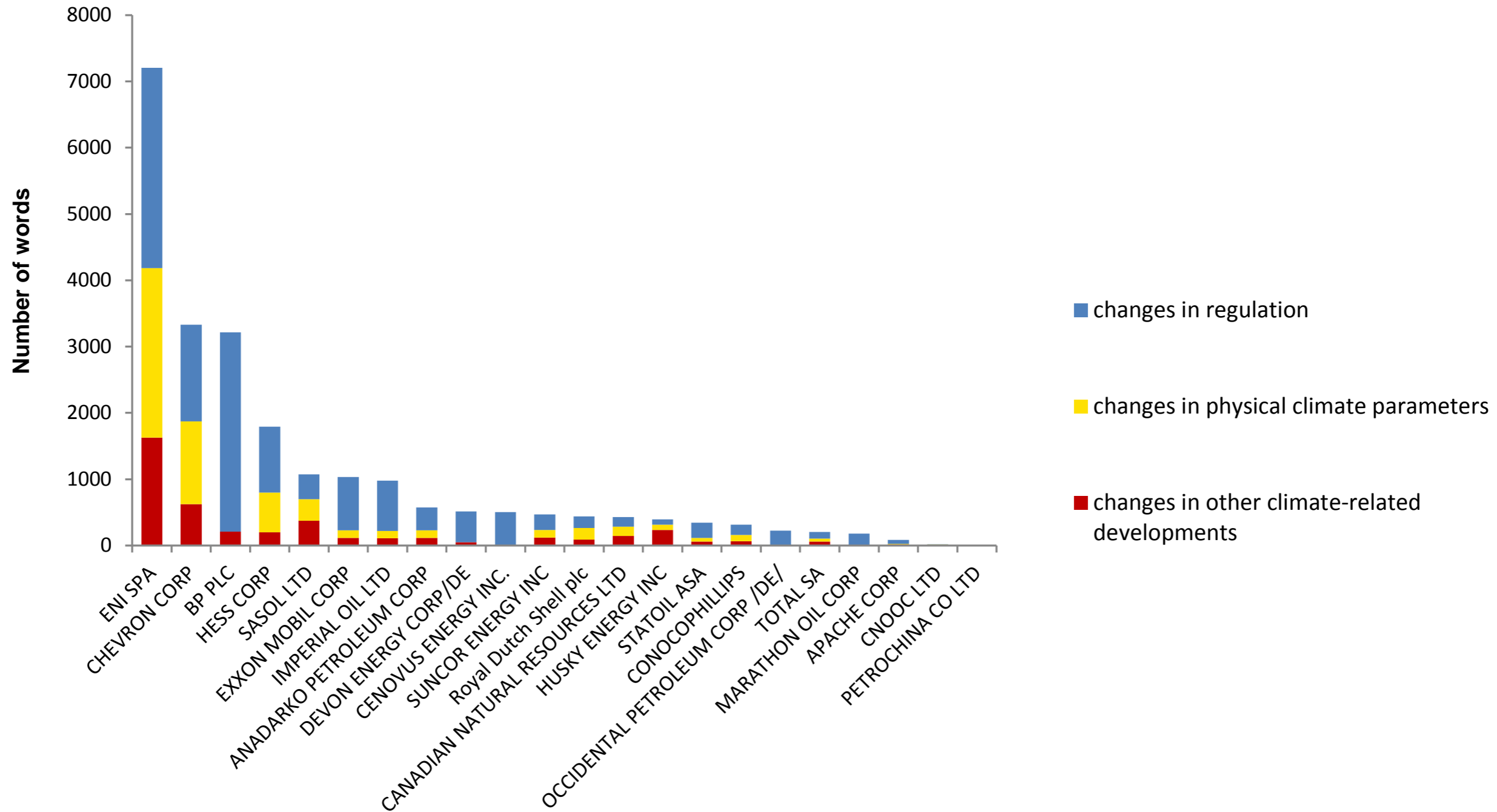


- Information spread through the report
- Integrated reporting?
- Integration vs. focus

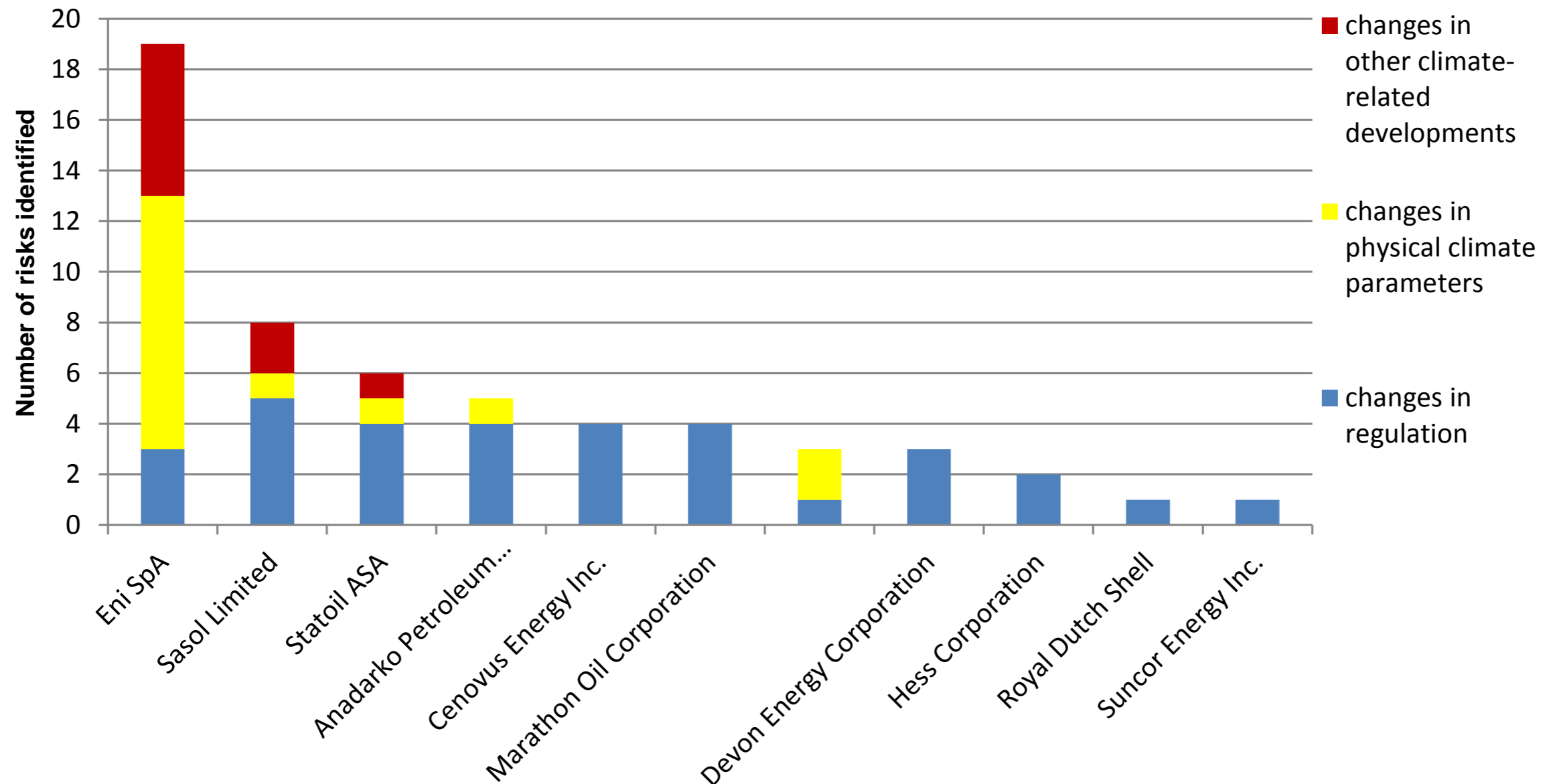
Results – Content description (SEC)



Results – Content description (CDP)



Results – Content description (CDP) – Material risks



Results - Content description (SEC) – Regulatory risks

		RELEVANCE: <input type="radio"/> Unclear <input checked="" type="radio"/> Low <input type="radio"/> Medium <input type="radio"/> High
		RELEVANCE: <input type="radio"/> Unclear <input checked="" type="radio"/> Low <input type="radio"/> Medium <input type="radio"/> High
		<<< more There are a number of factors that could affect the future operations of Shell and could cause those results to differ materially from those expressed in the forward-looking statements included in this Report, including (without limitation): * (a) price fluctuations in crude oil and natural gas;
6%	127 words	RELEVANCE: <input type="radio"/> Unclear <input checked="" type="radio"/> Low <input type="radio"/> Medium <input type="radio"/> High <<< more There are various risks in developing reserves, including construction, operational, geophysical, geological and regulatory risks . Our future prospects largely depend on our capital expenditures, which are subject to various risks Our ability to maintain and increase our revenues, profit and cash flows depends upon continuous capital spending, which is subject to a number of contingencies, some of which are beyond our control. These variables include: cash flows from operations, the availability and terms of external financing, our ability to execute our project plans and commence production on time, weather conditions , the availability of services and facilities, approvals required from the PRC and foreign governments for certain capital expenditures and
17%	161 words	RELEVANCE: <input type="radio"/> Unclear <input type="radio"/> Low <input type="radio"/> Medium <input checked="" type="radio"/> High <<< more Climate Change - Policy makers in the U.S. are increasingly focusing on whether the emissions of greenhouse gases, such as carbon dioxide and methane, are contributing to harmful climatic changes . Policy makers at both the U.S. federal and state level have introduced legislation and proposed new regulations that are designed to quantify and limit the emission of greenhouse gases through inventories and limitations on greenhouse gas emissions. Legislative initiatives to date have focused on the development of cap-and-trade programs . These programs generally would cap overall greenhouse gas emissions on an economy-wide basis and require major sources of greenhouse gas emissions or major fuel producers to acquire and surrender emission allowances . Cap-and-trade programs would be relevant to our operations because the equipment we use to explore for, develop, produce and process oil and natural gas emits greenhouse gases. Additionally, the combustion of carbon-based fuels, such as the oil, gas and NGLs we sell, emits carbon dioxide and other greenhouse gases. more >>>

Results - Content description (SEC) – Regulatory risks

32%	651 words	<p>RELEVANCE: <input type="radio"/> Unclear <input type="radio"/> Low <input type="radio"/> Medium <input checked="" type="radio"/> High</p> <p><<< more Climate change Growth in energy demand means that all forms of energy will be needed over the longer term. With hydrocarbons forecast to provide the bulk of the energy needed over the coming decades, policy makers are focusing on regulations which balance energy demand with environmental</p> <p>General threat of regulation; increase in operational costs; already considering in evaluation of projects</p> <p>in the years to come regulations may impose a price on CO2 emissions that all companies will have to incorporate in their investment plans and that may result in higher energy and product costs. Governments may also require companies to apply technical measures to reduce their CO2 emissions; this will increase project costs. Currently enacted and proposed legislation in the US and other countries, has been subject to litigation regarding climate change. Shell, together with other energy companies, has been subject to litigation regarding climate change. Litigation; not material The litigation is without merit and are not material to Shell. As energy demand increases and easily accessible oil and gas resources decline, we are developing resources that take more energy and advanced technology to produce. This growth includes expanding our conventional oil and gas businesses, our oil sands operations in Canada, our gas-to-liquids (GTL) business in Qatar and our global liquefied natural gas (LNG) business. As our businesses grow and production becomes more energy intensive, we expect there will be an associated increase in the direct CO2 emissions from the Upstream facilities we operate. We are seeking cost-effective ways to manage CO2 emissions and see potential business opportunities in developing such solutions. Our main contributions to reducing CO2 emissions are in four areas: supplying more natural gas; supplying more biofuels; progressing carbon capture and storage; and implementing energy efficiency measures in our operations. Nearly one-third of the world's CO2 emissions comes from power generation. For most countries, using more gas in power generation instead of coal can make the largest contribution, at the lowest cost, to meeting their emission reduction objectives this decade. In combination with renewables and carbon capture and storage, natural gas is also essential for a significantly lower carbon power generation by 2020. Opportunities With Shell's leading position in LNG and new technologies in recovering natural gas from tight-rock formations, we can supply natural gas to power generation. We see biofuels as the most practical and commercially viable way to reduce CO2 emissions from transport fuels over the coming years. Our Ra zen joint venture in Brazil produces two billion litres annually of ethanol from sugar cane - the best performing of today's biofuels in terms of CO2 emissions. We are also investing in research to develop and commercialise advanced biofuels. The International Energy Agency has stated that carbon capture and storage (CCS) could contribute as much as 19% of the CO2 mitigation effort required by 2050. To advance CCS technologies, Shell is involved in CCS projects, including the Mongstad test centre in Norway, the Gorgon project in Australia and the Quest project in Canada. We are also involved in the consideration of a project in the UK to store CO2 in a depleted gas reservoir in the North Sea. During this important demonstration phase, government support is essential and initiatives such as the United Nations' acceptance of CCS as an offsetting activity under the Clean Development Mechanism is a positive step in progressing such technologies. We continue to focus on implementing energy efficiency measures in our operations. These include our major oil and gas production operations, oil refineries and chemical plants. In addition, we work to help our customers conserve energy and reduce their CO2 emissions. The flaring, or burning off, of gas in our Upstream business contributed to our overall GHG emissions in 2011. more >>></p>

Results - Content description (CDP) – Regulatory risks

Risk driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact
General environmental regulations, including planning	Rising climate change concerns could lead to additional regulatory measures that may result in project delays and higher costs.	Other: additional costs in delayed projects or reduced production in certain projects	6-10 years	Direct	About as likely as not	High
Cap and trade schemes	Allowance purchasing: Phase III of the Emissions Trading System (ETS) which will run from 2013-2020 will see facilities having to buy at auction an increasing percentage of allowances for compliance within the scheme. This is a shift away from the current approach which sees most allowances given to participants at no cost. Poorer performing facilities will have to buy more allowances than competitors.	Increased operational cost	1-5 years	Direct	Virtually certain	Low-medium
Product efficiency regulations and standards	Low Carbon Fuel Standards and Renewable Fuel mandates in the European Union and USA. Various national, regional and state based low carbon fuel directives and targets mean that new fuels must be developed and brought to market in order to comply with a variety of programmes. This may change the cost structure of the business against uncertainty in fuel prices.	Other: Change the cost structure of the business against uncertainty in fuel prices.	1-5 years	Indirect (Supply chain)	Virtually certain	Low-medium
Carbon taxes	Carbon costs: EU, USA, Japan, Australia and Canada. These countries are in the process of developing (additional) climate legislation which may include the use of emissions trading systems, carbon taxes and emissions performance standards. Such developments may introduce new carbon costs to our businesses which might impact our financial performance.	Increased operational cost	6-10 years	Indirect (Client)	Very likely	Low-medium

Results - Content description (CDP) – Regulatory risks

R1.i) Potential financial implications of risk before taking action:

In the future, in order to help meet the world's energy demand, we expect our production to rise and more of our production to

Apache on carbon taxes (CDP): The company's present biggest financial exposure to increased GHG costs would be in Australia, where the carbon tax is expected to add more than \$20 Million per year to the region's operating costs.

using a cost of \$40 per tonne of CO₂. This figure was disclosed on page 2 of the 2011 Sustainability Report.

ii) The methods used to manage this risk:

Shell uses internal analysis and management processes to estimate the exposure of existing assets and planned projects to future constraints on greenhouse gas emissions and also to quantify and optimise the risks from regulatory constraints.

iii) Costs associated with action:

We consider the potential cost of a project's CO₂ emissions in all major investment decisions, using a cost of \$40 per tonne of CO₂. This figure was disclosed on page 2 of the 2011 Sustainability Report.

Concluding remarks

- ▼ No presentation standard;
- ▼ No designated places in fillings;
- ▼ Open interpretation of “materiality”;
- ▼ No clear information requirements;



Diminished value for investors and analysts

(even aggregators are not able to save it!)

- ▼ Tagging of text blocks could help finding information
- ▼ Risks need to be fully characterized by: driver; impact; frequency; time horizon

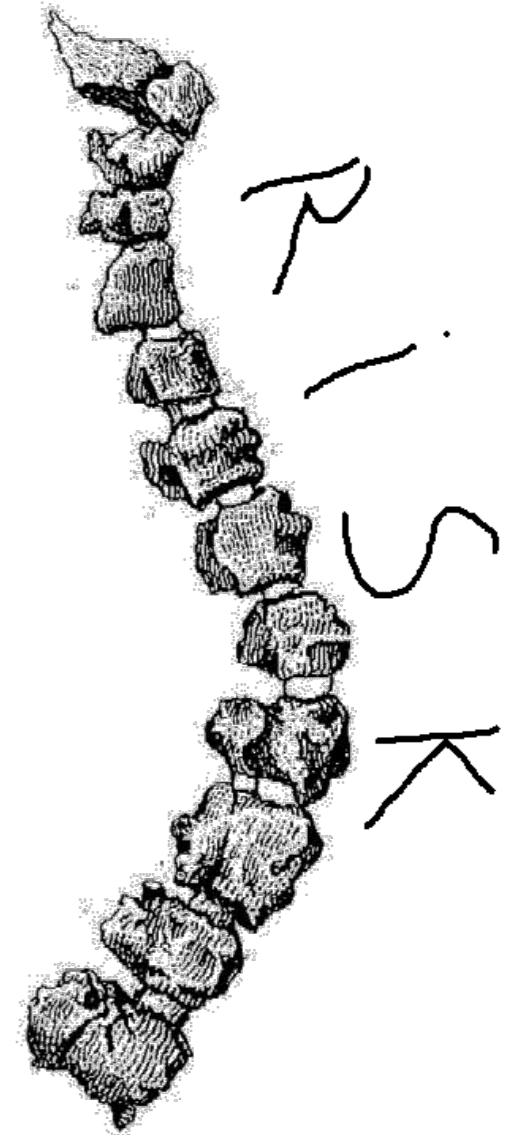
Concluding remarks

- ▼ State of denial
- ▼ Soft disclosure
- ▼ No discussion of stranded assets



**Overall systemic risk
=
A climate and financial crisis**

FINANCE



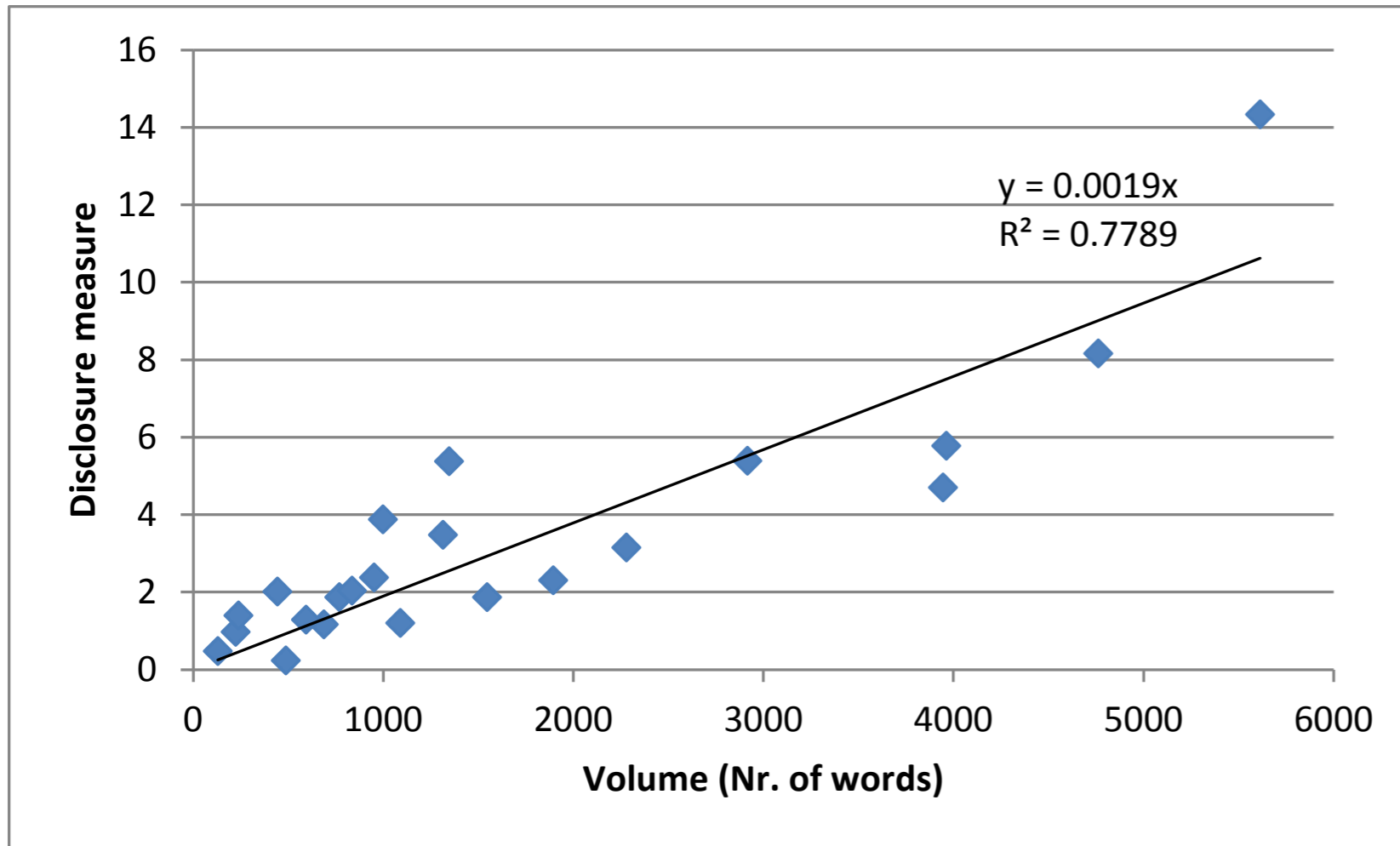
Act now!



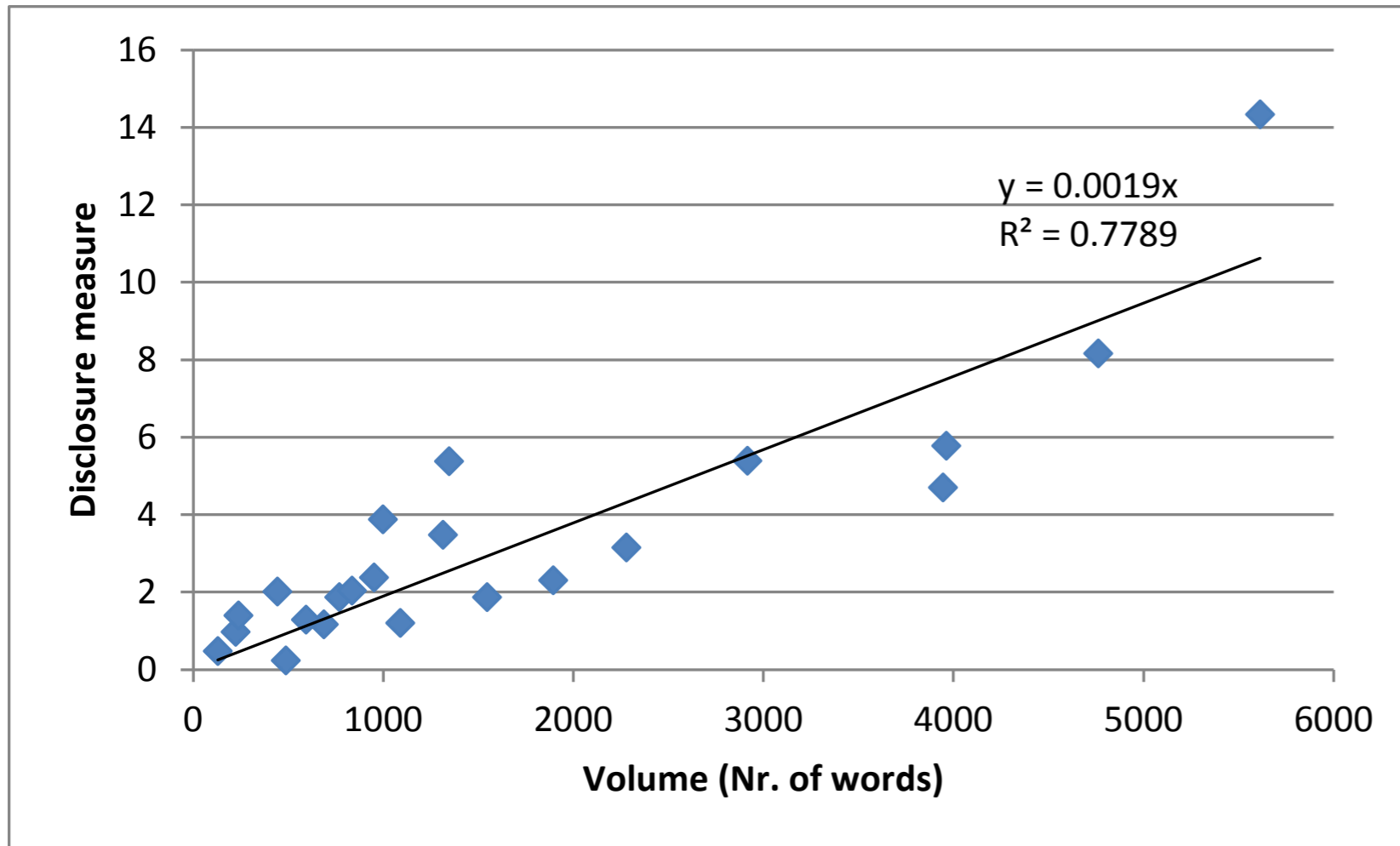


DRIVING SUSTAINABLE ECONOMIES

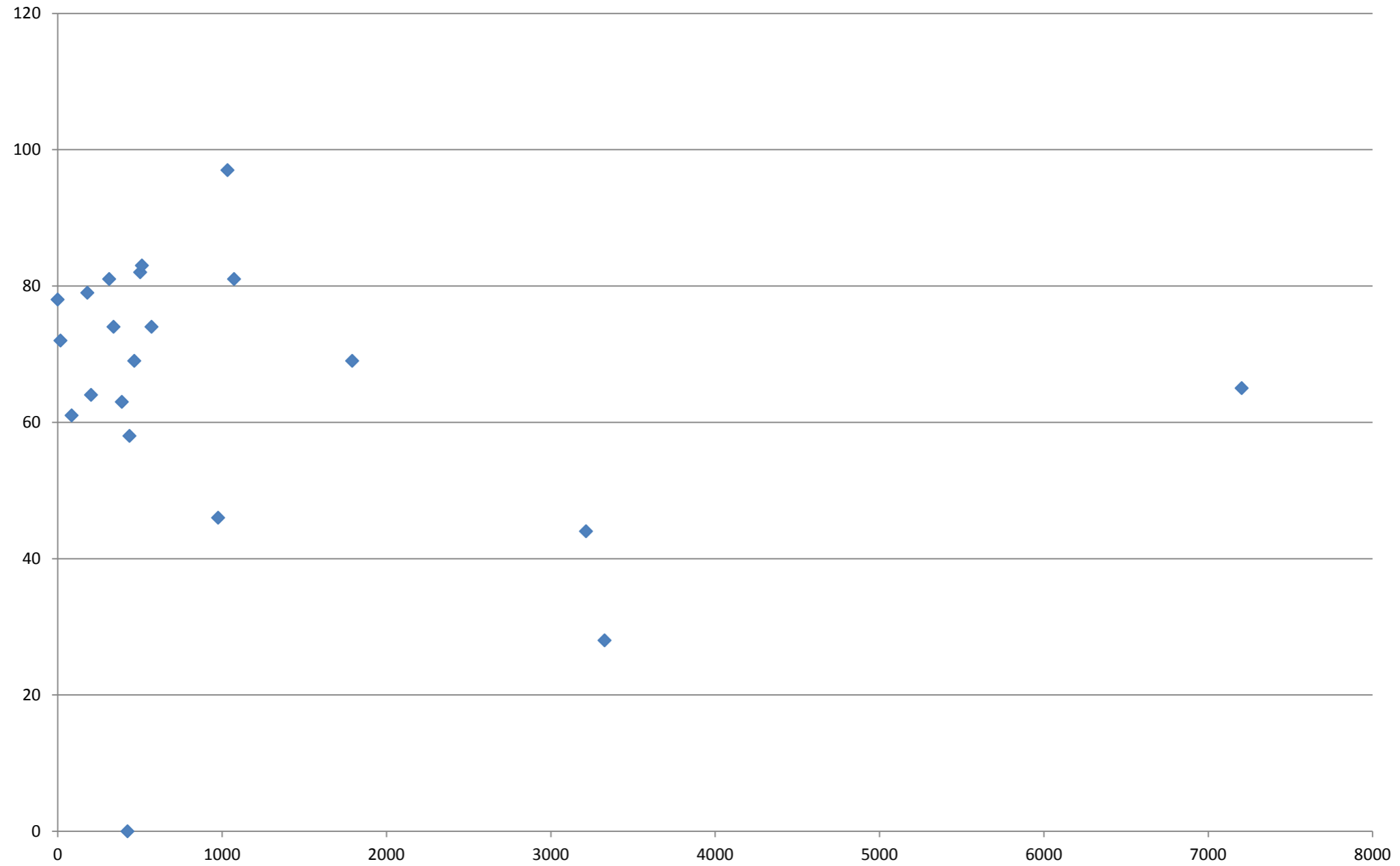
Discussion



Discussion



Results – Volumes of information



Results – Volumes of information

