A Better World, Through Better Business

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Building the Business Case for Sustainability

- Investor Discussion

## ROSI<sup>™</sup> Investor Workshop Agenda

- Quick review of the ROSI<sup>™</sup> framework
- ROSI<sup>™</sup> in action (case studies)
- ROSI<sup>™</sup> and investors
- Breakout groups and report out on how ROSI<sup>™</sup> can be most useful to investors

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## Most companies are not monetizing the Return on Sustainability

- Sustainability strategy development and execution sit in different units within the business
- Multiple strategies for being sustainable are being implemented at the same time
- Some benefits are intangible and difficult to measure
- Investors and board members are typically not asking
- Organizational inertia

'We have assumed the financial case is there to support what we do, but have not done the analysis to prove it'

#### **Our Research Begins with This Premise**

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#### Return on Sustainability Investment (ROSI™) Framework

When a company embeds sustainability in its strategy and practice, it...



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## A standard 5-step process to identify and translate qualitative business benefits into financial value

1. Identify	2. Assess Impact	3. Decompose	4. Quantify	▶ 5. Monetize
Organize and consider available information on important sustainability challenges and how the business is addressing associated risks and/or opportunities associated with those challenges	Determine areas of the business that may be impacted by the challenge and actions taken to mitigate risks and/or pursue opportunities	Define the types of economic benefits that could be expected from taking action on the challenges	Estimate the magnitude of those benefits and when they could be realized	Translate the benefits into economic value, stress test then forecast ROI

Reference: Atz, et al. 2019. Review of Business: Interdisciplinary Journal on Risk and Society, 39(2), 1–31.

### Like Other Robust ROI Processes, ROSI™:

- Can support decision-making on individual initiatives or among alternative courses of action
- Is useful from screening to investment grade analyses
- Is relevant for monetizing the costs and benefits of BAU, ongoing projects and/or potential new initiatives
- Is flexible in addressing common forecasting challenges (e.g., those related to: data availability; data quality/credibility; uncertainty; attribution; allocation of benefits; etc.)

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# DRIVING SUSTAINABLE DECISIONS APPLIED EXAMPLES

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**The Situation:** Facing the loss of exclusivity and the resulting loss of revenues in several key markets, a global pharmaceutical company's research team identified ways to increase the overall efficiency and reduce costs in the manufacture of one of its key medications. Through a series of innovations, the company developed a modified enzymatic process that reduced manufacturing cost through a number of optimizations including several that reduced environmental impact (collectively termed *Green Chemistry* improvements). According to a LCA conducted in association with the new process, the reductions in impact included:

- 82% less energy use;
- 80% less chemical ingredients;
- 81% less water use;
- 77% less waste generation; and
- 75% reduction in greenhouse gas emissions.

**Key Question:** What was the monetary value (benefits) associated with these reductions? Could these results help justify the acceleration of other optimization decisions?

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#### Embed

When companies include ESG risks and opportunities in their strategy and decision-making processes, they...

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**Key Question:** For relevant parts of the business, **what type of economic benefits** could be expected?



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	Reduced Water Consumption	Methodology or Example	Unit	Data	
Decreases in Resource Consumption	Quantity of water purchased - before	Drawing data from available sources (i.e., water utility bills), include the quantity of water purchased and used for this process before sustainable approach was implemented	m <sup>3</sup>	2,700,0	000
	Quantity of water purchased - after	Drawing data from available sources (i.e., water utility bills), include the quantity of water purchased and used for this process after sustainable approach was implemented	m <sup>3</sup>	510,0	00
	Units produced - before	Annual production volume before sustainable approach was implemented	tonne	1	00
	Units produced - after	Annual production volume after sustainable approach was implemented	tonne	1	00
Decreases In Best Sins Decreases In Waste Generation Uther (depending on sustainabilit v initiative)	Water cost***	Drawing data from available sources (i.e., water utility bills), include the total cost of water	USD / m <sup>3</sup>	\$0.	.35
	Water cost – before		USD	\$ 945,0	00
	Water cost - after	Calculated	USD	\$ 178,5	00
	Cost saved from water	Subtract the cost of water after from the cost of water before the sustainable approach was implemented	USD	\$ 766,5	500

Note: The Stern CSB used the cost of water, provided by a heavy manufacturing company, based in the United States, participating in another research study. Data shown are resource inputs for 100 tonnes of production.

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Decreases in Emissions

Reduced Exposure To Carbon Emission Fees	Methodology Or Example	Unit	Data
Carbon emissions - before		tonne	73,000
Carbon emissions - after		tonne	18,000
Regulatory limit on emissions		tonne	25,000
Emissions reduced to regulatory limit		tonne	48,000
Carbon price per tonne***		USD / tonne	\$ 5.00
Total Benefit	Multiply carbon price by volume of carbon emissions reduced to reach the regulatory limit	USD	\$ 240,000

Note: The Stern CSB used an actual carbon fee derived from a legislative proposal in one of the company's manufacturing geographies. GHG emission reductions are based on the life cycle carbon emission reduction estimates developed by a 3<sup>rd</sup> party, life cycle assessment consultancy. Data shown are greenhouse gas emissions resulting from 100Mtonnes of production.

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Total Net Benefits For Operational Efficiencies	Unit	Data
	USD/100	
1.0: Decreases In Resource Consumption	MT	\$943,000
2.0: Decrease In Waste Generation / Disposal		\$363,650
3.0: Recycling Of Manufacturing Waste		
4.0: Decrease In Emissions		\$240,000
5.0: Recovery And Reuse / Recycling Of End-of-life Product		
6.0: Additional Process Capacity For New Production		
7.0: Other Relevant Benefits		
Benefits From Other Categories		????
	USD/100	
Total Benefits	МТ	\$1,546,650

Canadian electricity generator, with annual revenues of \$1 billion has a generation fleet that is a mix of coal, natural gas, and renewable (wind and solar) assets. Facing a Canadian mandate to go coal-free by 2030, the organization is considering a more aggressive position to decarbonization, and is evaluating the business case for an early exit from coal-generated electricity.



#### Key Question:

- What is the monetary value (benefits) that could be accrued if the company makes a more aggressive push into renewable energy?
- Could these results help justify an accelerated pace of decarbonization?

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#### **Example Case – Early Decarbonization**

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#### Potential Areas of High Impact & Opportunity

#### Embed

When companies include ESG risks and opportunities in their strategy and decision-making processes, they...

#### Improve Risk Management Stakeholder Engagement

Operational Efficiency

Talent Management

**Supplier Relations** 

Media Coverage

**Customer Loyalty** 

Sales & Marketing

Innovation

#### Drive

Revenue Growth

Greater Profitability

Higher Corporate Valuation

#### Deliver

Quantifiable Business Value & Positive Societal Impact

#### **Example Case – Early Decarbonization**

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Mediating factor	Expected benefit	Benefit description
Talent	Improved retention / decreased turnover of employees	Avoided hiring and training costs of new employees as a result of higher retention of existing employees
Management	Increased productivity	Avoided labor costs as existing employees work harder
Risk	Lower cost of debt	Cost avoided through better debt terms from lenders who view the company as less risky
Management	Lower cost of equity	Cost avoided through better equity terms from stockholders who view the company as less risky
Sales and Marketing	Increased market competitiveness and winning bids for new project investments	New revenues from higher win rate of competitive bids as a result of being viewed as a more sustainable supplier
Stakeholder Engagement	Fewer stakeholder interventions	Avoided costs resulting from fewer stakeholder interventions during new and renewal permitting
	Accelerated permitting	Earlier accrual of revenues from new facilities as a result of faster permitting

#### **Example Case – Early Decarbonization**

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Improved Employee Retention	Improved Employee Productivity	Reduced Debt Cost	Reduced Equity Cost
Current voluntary turnover rate <sup>1</sup> X Current turnover cost <sup>1</sup> X <b>Expected decrease in</b> turnover from accelerated decarbonization <sup>2</sup> X Proportion of generation fleet impacted by coal phase-out <sup>1</sup> X Proportion of non-union labor force <sup>1</sup>	# Full-time equivalents <sup>1</sup> X Avg. annual salary <sup>1</sup> X <i>Expected increase in</i> <i>employee productivity</i> <i>from accelerated</i> <i>decarbonization</i> <sup>3</sup> X Proportion of generation fleet impacted by coal phase-out <sup>1</sup> X Proportion of non-union labor force <sup>1</sup>	Current debt value <sup>1</sup> X Expected reduction in cost-of-debt from accelerated decarbonization <sup>4</sup> X Proportion of generation fleet impacted by coal phase-out <sup>1</sup> X [(Avg. time remaining until debt maturity <sup>1</sup> ) / (Expected term of debt <sup>1</sup> )]	Current equity value <sup>1</sup> X Expected reduction in cost-of-equity from accelerated decarbonization <sup>4</sup> X Proportion of generation fleet impacted by coal phase-out <sup>1</sup>

Sources: 1Data provided directly by functional teams at Capital Power; 2D.F. Vitaliano, (2010); 3Delmas & Pekovic, 2013; S.E. Ghoul et al. 2011; G.L. Clark, A. Feiner & M. Viehs, 2015. Note: To be more conservative, the company's executive leadership team suggested we devalue the estimate for each benefit by a factor of 25%, before determining the final estimate for the expected benefits from accelerated decarbonization. 17

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Benefit	Annual Benefit (CAD 1,000s)	10-year Cumulative Benefit (CAD 1,000s)
Increased productivity	439.2	4,391.8
Improved employee retention	42.1	420.5
Reduction in cost of debt	276.7	2,767.0
Reduction in cost of equity	2,376.3	23,762.7
Total	3,134.3	31,342.0

Traditional Financial Theory on changes in cost of debt and equity



Lower cost of debt and equity leads to a lower WACC and higher stock price

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## Return on Sustainability Investment in Automotive Manufacturing

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### **ROSI in Automotive Manufacturing**

#### Strategies Identified

Reduce Resource Consumption Improve Waste Management Reduce Carbon Emissions Reduce VOC Emissions Recycle And Recover From End-Of-Life Products

Minimize Downtime In Regions Prone To Natural Disasters, Water Scarcity, Etc Avoid Use Of Conflict Minerals Improve Safety Improve Governance Around Sustainbility Use Renewable Energy

Incorporate more sustainable materials or design into the product

Increase Fuel Efficient Product Presence

Innovate to Provide Long-Term Improved Sustainability Technology

Increase Sustainable Product Presence

Engage Cosumers With Sustainability Through Innovative Services

Engage Employees In Quality Of Worklife Engage Suppliers On Specific Sustainability Matters (Improve Ecosystem) Improve Talent Acquisition, Employee Retention, And Productivity

## Key Drivers

Operating Performance (includes Operating Efficiency, Improved Sales and Marketing, and Better Media

**Risk Reduction** 

Innovation

Stakeholder Engagement (Includes

Better Supplier and Employee Relations and Customer Loyalty)

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#### Sustainable Strategies

- Reduce resource consumption
- Improve waste management
- Improve employee relations
- Innovate to provide longterm improved sustainable technologies

#### **Sustainable Practices**

- Implementing new water filtration system
- Recycling paint and solvents
- Implementing ergonomic changes to production line
- Producing more electric vehicles

#### **Benefits**

- Reduced costs for water, energy
- Reduced costs for wastewater and toxic waste disposal
- Reduced costs for paint, solvents
- Revenue for recycled materials
- Higher productivity, increased worker safety
- New revenue from
  innovative products

## Key Findings

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#### Waste management reduces costs, generates additional revenues

#### **Examples of Practices**

- Process improvements to recover, reuse and recycle waste (including water)
- Increase the number of land-fill free sites
- Dedicated group to identify reuse
  opportunities



#### Results

- Cost savings due to lower spend on virgin materials
- Increased net revenues from sales to recyclers
- Reduction in water costs by using recycled water
- Energy savings due to lower use for recycled vs virgin materials
- Reduction in waste disposal costs

#### EBIT impact of \$235 million

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## Incorporating benefits of sustainability strategies into decisionmaking requires a systems thinking approach

#### **Examples of Practices**

 Recovering & recycling materials from end of life (EOL) vehicles - to maximize the benefit reusable material needs to be incorporated in the car design



## Results

- 2.5% of treated EOL material was recovered and reused and 10% was sold to recyclers in Europe
- Savings achieved from reduced virgin materials, process savings and lower disposal costs and in incremental revenues generated from sales

#### Total EBIT savings of \$100 million

## Key Findings

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# Current reporting frameworks may not be adequate for measuring financial benefits

- Number of product recalls is standard reporting but not financial impact
- Information on costs is needed to understand the financial impact; not currently aggregated



- Average repair cost per vehicle times average number of cars per recall
- Average legal & PR costs per recall
- Money spent on increased quality control, premium redesigned parts, and additional training

The financial benefit of xx less recalls was more than \$550 million.

DISCUSSSION

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- Quality and materiality of ESG data
- ESG data is divorced from financial data
- Difficult to monetize risk avoided due to sustainability investments
- Difficult to monetize growth and margin improvement due to sustainability investments
- Valuation models don't include these topics
- Companies are not tracking ROSI

Aspiration for ROSI: Bridge ESG/Sustainability and Financial Performance

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## For Corporates:

- Sustainability together with ROSI embedded into corporate business strategy, decision-making and accounting.
- Result: better performing business socially, environmentally, and financially

#### For Investors:

Use ROSI in engagement with companies to better assess where relative value exists in ESG strategies and corporate investments. Also use as an overlay in understanding ESG data.

Result: Improved investor decisionmaking and valuation

- Map material sustainability strategies by sector and types of practices that create value
- Help to monetize intangibles
- Provide questions to ask companies for research (before owning stock/stake) and engagement (after owning stock/stake) purposes.
- Incorporate into quantitative analysis.
- Incorporate into DCF or other valuation models when determining intrinsic value. Is it being undervalued or undervalued based on its intrinsic value (e.g. how is it going to perform over the long-term). How does it impact cash flows (e.g. climate risk -- may raise debt levels) or cost of capital?

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## Methodology and Tool Development

- Piloting with different industry sectors and individual companies.
- Deep dive development of mediating factor methodologies, e.g. risk
- Partnership with Invest Industrial (PE firm) to develop valuation tools
- Practitioner testing and academic review

- Mediating factor monetization guides
- ROSI guides per industry
- Strategic planning guides to ROSI
- Guide to relevant academic literature for assumptions/probabilities
- CFO tools (how to implement new systems within a company).
- Valuation tools
- Industry mapping: map the key value creating activities, as aligned with SASB

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What do you see as the hurdles to assessing the return on sustainability investment?

- How can ROSI be improved as a methodology?
- Looking at the mediating factors, which do you see as the most critical around which we should develop additional information and tools?
- In general, what kind of tools and guidance should Stern develop that would be helpful for asset owners and managers (clarify private vs public markets)?
- Any additional ideas on how ROSI can help investors?

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