








Joint OECD/EU/NI workshop


Green Business Model Innovation

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Background



<p>Green Business models in the Nordic Region</p> <p>Green Paper for Nordic Council of Ministers 2010</p> <ul style="list-style-type: none"> ▪ First investigation of green business models in the Nordic countries ▪ Focus on product-service-system (PSS) models ▪ Case studies of 25 Nordic companies ▪ => Nordic Common Co-operation Program 2011-2013 	<p>Green Business Model Innovation</p> <p>New Project funded by Nordic Innovation 2011-12</p> <ul style="list-style-type: none"> ▪ Conceptualization/framework ▪ Cases ▪ Effects <ul style="list-style-type: none"> ▪ Policy and policy anchoring ▪ Tools for companies
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Project approach (framework)



Main category	Main emphasis on:	Examples
Products and services	Products for others	Cleantech
	Services for others	Environmental advice
Processes	Own company	Switching to energy efficient machines
	Life-cycle	C2C
	Incentives	ESCO

Focus

- Bigger change in business model and affect more parts of the value chain
- May imply a higher degree of radical/systemic innovation

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Life-cycle and incentive models (framework)



Models

Incentive Models

- **Functional Sales**
- Energy Saving Companies (ESCO)
- Material Service Company (MASCO)
- Chemical Management Services (CMS)
- Design, Build, Finance, Operate (DBFO)

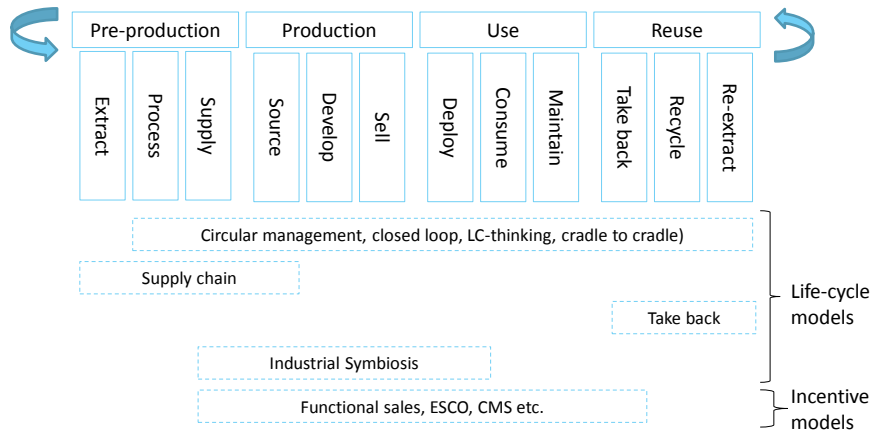
Life Cycle Models

- **Green Supply Chain Management (GSCM)**
- **Take Back Management**
- **Cradle to Cradle**
- **Industrial Symbiosis**

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How companies green the value chain



How the BM is greened (the Canvas) The case of Danfoss Solutions (ESCO)

Growth Strategy				
Key Partners	Key Activities	Value Proposition	Customer Relationship	Customer Segment
	Key Resources		Channels	
Cost Structure			Revenue Streams	
Comparative Strategy				

Key Activities: Production, Retrofitting Service

Value Proposition: Energy products, Reduction of clients' energy costs

Customer Relationship: Buyer - Seller, Co-creation

Customer Segment: Industrial food & beverages companies

Revenue Streams: One-time product payment, Performance payment and guarantee

This project's case studies



Life Cycle models



Incentive models



Characteristics (preliminary)



- Green business model innovation happens across size and or sector
- Few companies focus their innovation on both upstream and downstream
- Some companies combine elements from different green business models
- The epicenter for innovation is often driven by (expected) new marked trends/demands (i.e. from the need to create competitive advantages).
- The case studies show that the innovation often starts:
 - in the product design (key resources, often from waste, leading to new partnerships etc.) and
 - in creating a new value proposition that either adds a service or/by working on closing the loop between revenue stream and cost-structure.

These preliminary conclusions are based on how the case companies have deployed their green business model

Barriers to Green Business Model Innovation (Preliminary)



Main challenges

- Uncovered field - not very disseminated
- Uncertainty about real benefits and costs
- Traditional mind sets and practices

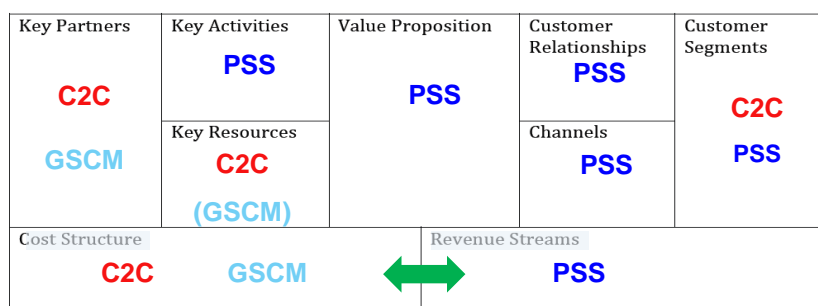
Prerequisites!

- Multitude of competencies (juridical, technical, economic, financial, accountants)
- Risk taking capital for innovation, adaptation, implementation – often need for third party investor
- High engagement - not at least also in company management
- Patience for reaping long term gains

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These preliminary conclusions are based on how the case companies have deployed their green business model

Focus of innovation (preliminary)



Upstream focus

Cost-cutting, higher profit-margins and product innovation by

- Creating new partnerships
- Sourcing resources from waste
- Training in new methods

Downstream focus

Customized solutions and innovation in revenue streams by

- Adding services to product sale
- Flexible solutions
- Supplying the needed amount to customers or end-users

These preliminary conclusions are based on how the case companies have deployed their green business model

Effects of the Incentive Models



Model		Economic benefits	Environmental benefits
CMS	Providers	US: \$ 1 billion in savings Globally: \$ 1.5 billion in savings (Source: CMS Industry report (2009))	
	Customers	Firm level: 10-30% chemical costs savings (Source: Volvo, Oshave/Haas, Rayton Systems) 47% management costs savings 16% chemical prices savings (Source: CMS Industry report (2009))	Firm level: 50-75% reduction of emissions of VOC (Source: Oshawa/Haas, Ford/DuPont, Chryslers/Ford) 57% report reductions in chemicals being applied (Source: CMS Industry report (2009)) 71% reduction in paint waste (Source: Raytheon Systems) 87% report reductions in chemicals being applied 18% reduction in use of chemicals (Source: CMS Industry report (2009))
ESCO	Providers	Europe: 150 million EUR per annum Western European market share (Source: Bertoldi et al. (2006)) 23% reduction of the total electric bill baseline (Source: COWI, (2008))	
	Customers	5-10% percentage of savings guaranteed to the client in comparison to its previous energy bills (Source: Bertoldi, (2005)) USA: 26% operation & maintenance savings in state/local government buildings (Source: Berkeley National Laboratory, (2005))	1,500 tons per annum of carbon dioxide emissions (Source: COWI, (2008)) Austria: 7,4 tons per year CO ₂ and 24,615 kWh savings with the implementation of new lighting control devices (Source: PU Benefits, (2005))
FS	Providers	Firm level: \$1.14 billion global revenue (Source: VolvoAero)	
	Customers	0 investments in technology hardware 72p per wash cycle (Source: Electrolux pay-per-wash scheme)	30 liters of water less/wash because of the updated technology < 1 kilowatt consumption/hour (Source: Electrolux pay-per-wash scheme)

Effects of the life-cycle models



Model		Economic benefits	Environmental benefits
GSCM	Providers	Canada: 20-50% reductions in distribution costs (Source: SC&L Association Canada, (2008))	Canada: >50% energy reductions 20-50% waste reductions 20-50% reductions in GHG emissions (Source: SC&L Association Canada, (2008))
	Customers	Firm level: \$ 44 million by switching from corrugated to reusable plastic shipping containers (Source: Pepsi-Cola)	23 million tons CO ₂ avoided (Source: Inbound Logistics, (2011))
IS	Providers	UK: 1,5 billion pounds boost for the UK economy (Source: NISP)	Firm level: 170,000 tonnes per annum CO ₂ savings Kwinana Industrial Area: 290.9 CO ₂ savings from reduced transport (Source: Kwinana Industrial Area)
	Customers	UK: 860 million pounds savings (Source: NISP) Kalundborg: \$15 million annual savings (Source: Christiansen, (2007))	UK: 35 million tonnes CO ₂ emission reductions 39 million tonnes of industrial waste diverted from landfill 53 million tonnes of saved virgin materials (Source: NISP)
C2C	Providers	Firm level: 1/3 of turnover from C2C certified products – competitive advantage (Source: Altrend, DESSO)	Firm level: 80-98% of the product can be disassembled for recycling (Source: Haworth Inc., The Timberland Company) Belgium: 30 million kg of green waste into compost (Source: Flemish Public Waste Agency)
	Customers	Construction Industry: 33% cheaper to use C2C principle (Source: Simon et al, 2007)	
Take-back	Providers	Firm level: up to 60% of the parts of products are common with previous equipment in order to rise the reuse level – avoided costs and virgin materials usage (Source: Xerox, Samsung)	Denmark: 86% recovery of large household appliances 97% small household appliances 100% lighting equipment 98% electrical and electronic tools (Source: DPA-System, (2011)) 67% greenhouse gas emissions reductions per year – carpet industry (Source: Honeywell)
	Customers	½ price reduction for refurbished carpet (Source: Milliken)	Denmark: 15 kg collected WEEE per inhabitant in Denmark 2010 (Source: DPA-System, (2011))

We will push for this agenda through:



June 2012	RIO+20
2012-	Nordic Council of Ministers and Nordic countries

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Thank you!



- The Green Paper can be downloaded at
- www.foranet.dk
- Project's material will be made available at website.

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