



Market prioritization
within
Waste Management Technologies

Version 1.5

Swedish Trade Council France
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This report was made by the Swedish Trade Council

Swedish Trade Council

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SUMMARY MARKET PRIORITIZATION WASTE MANAGEMENT

- There are significant ongoing investments in waste management world-wide, creating substantial opportunities for Swedish companies active in this field
- In order to shorten lead times to business for Swedish waste management companies, the STC has conducted market checks of 28 markets to make a first prioritization, with following main findings:
 - Markets vary a lot in terms of maturity: some have almost no activities within waste management, some carry out investments in basic treatment, some are upgrading current installations to advanced treatment and others are mainly maintaining existing infrastructure
- It was concluded that eleven markets both offer high market attractiveness and low barriers to entry. These prioritized markets are: Brazil, Canada, China, Czech Rep., Finland, Greece, Ireland, Italy, Spain, Turkey and UK

CONTENT

- Introduction
- Export market analysis
- Market prioritization
- Next steps
- Appendix

PROJECT BACKGROUND

- The issue of waste as a valuable resource and important factor for a sustainable environment has gained increased attention throughout the world in recent years. This awareness has eventually lead to an increased demand for waste management technology throughout the world.
- Swedish companies have a strong position in waste management. This knowledge can mainly be found among medium and small sized companies of which many have a good potential to export their products and services.
- In an assignment by the Swedish government, the Swedish Trade Council (STC) is promoting the export of Swedish companies with environmental friendly technology. Some specialized areas, where Sweden has been identified to hold a leading role have been prioritized by the STC. The area of waste management is one such prioritized area.
- By supplying market information, analyses and action plans on selected, most interesting markets, the STC is aiming to promote Swedish export in the area of waste management. The following presentation outlines the market prioritization process.

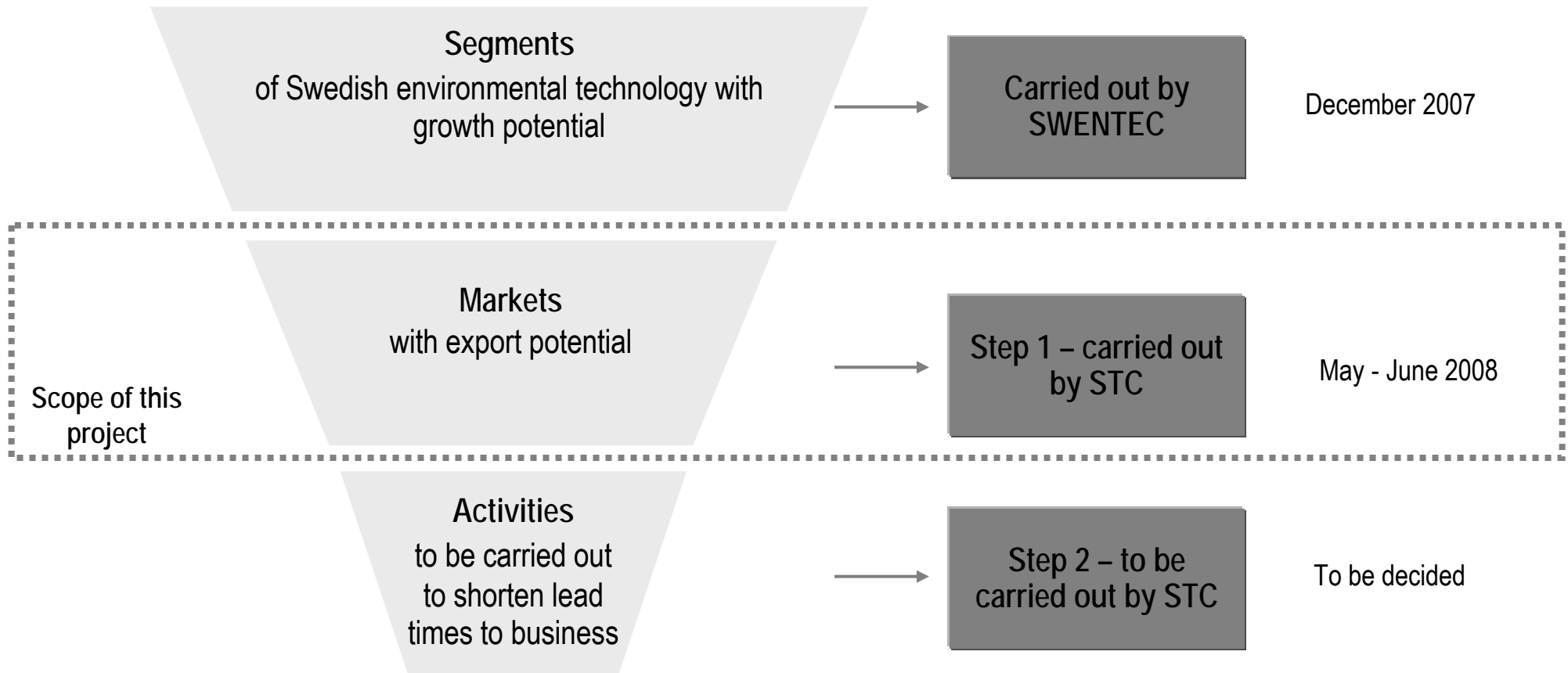


DEFINITIONS OF WASTE AND WASTE MANAGEMENT USED IN THIS REPORT

- Waste includes waste from households (in some countries mentioned as residential waste, domestic waste or municipal waste) as well as industrial waste (waste from the business sector, for example manufacturing industry, construction industry, trade, health care, administration etc; but we are not interested in waste from farming, forestry, mining or radioactive waste)
- Waste management is here defined as the collection, treatment (processing), land-filling, final disposal and recycling of waste materials



FUNNEL APPROACH TO ZOOM IN ON SEGMENTS, MARKETS AND ACTIVITIES WITH LARGEST POTENTIAL FOR EXPORT



WHY PRIORITIZE?

- Focus and long term commitment are essential to success

Entering a new market requires a substantial commitment in terms of time and money, especially in relation to the resources of small companies' resources

Before entering a new market the following factors need to be evaluated:

- Customer demand and buying criteria
- Technology level
- Access to financing
- Laws & regulations
- Local and international competition
- Business climate & culture

When entering a new market the following needs to be created:

- Sales & distribution network
- Local references
- Customer contacts
- Brand recognition
- Local networks (Swedish companies, sub-suppliers, consultants, politicians, etc)

Substantial scale and learning curve effects exist per country

RELEVANT ORGANIZATIONS IN SWEDEN

SWENTEC

Swedish Environmental Technology Council

- Governmentally initiated organization
- Mission of strengthening competitiveness and business opportunities of Swedish environmental technology companies
- Conducted a study mapping the competitive advantage of Swedish waste management companies

AVFALL SVERIGE

Swedish Trade Association for waste management and recycling

- The association has 400 members and its mission is to:
- Exchange experience between members
- Monitor development and spread knowledge about the sector

ÅTERVINNINGSS- INDUSTRIERNA

Industry association for recycling companies

- The association represents their membership companies
- Increases their members' competence
- Works to create good pre-conditions for their members when laws and regulations are being created

THE AIM OF THE PROJECT IS TO ENABLE SWEDISH COMPANIES TO INCREASE EXPORTS BY SEIZING BUSINESS OPPORTUNITIES

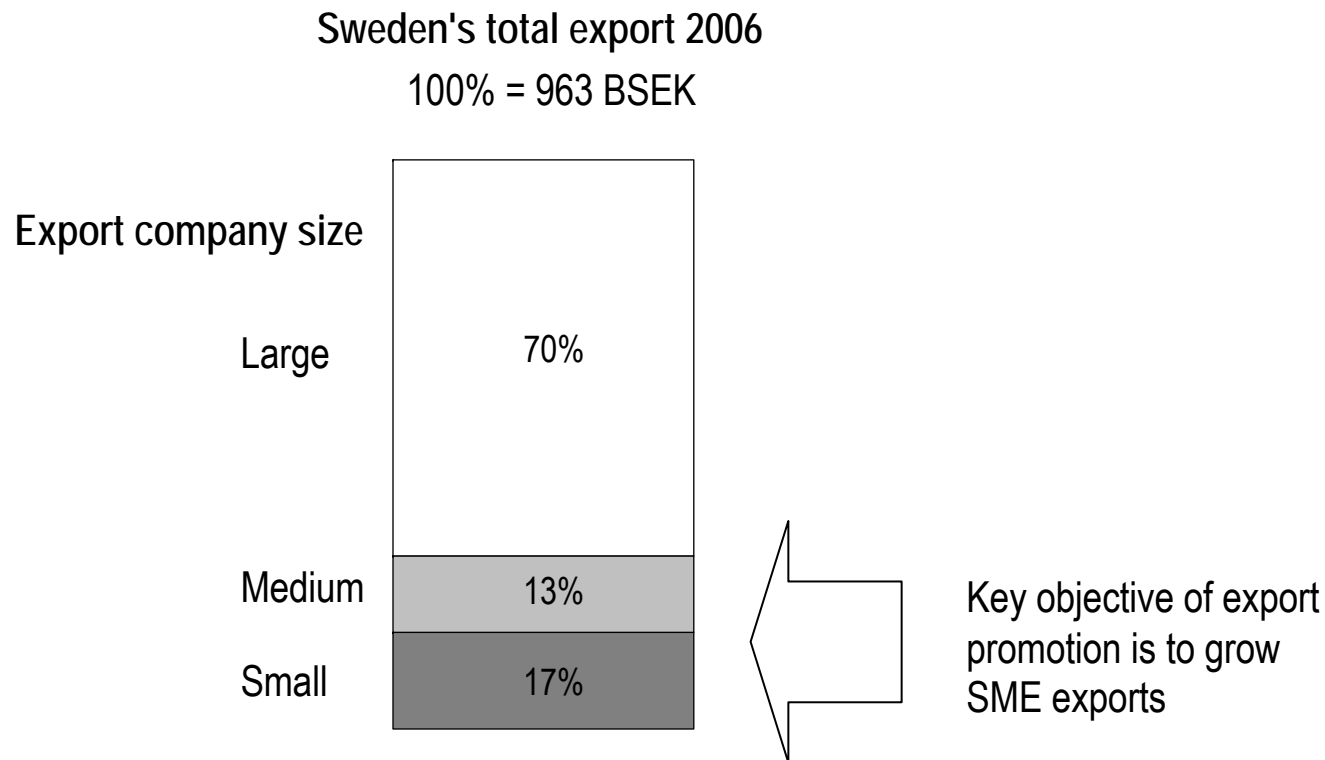
- This includes two sub objectives



* This study does not include export opportunities financed by development-aid export projects

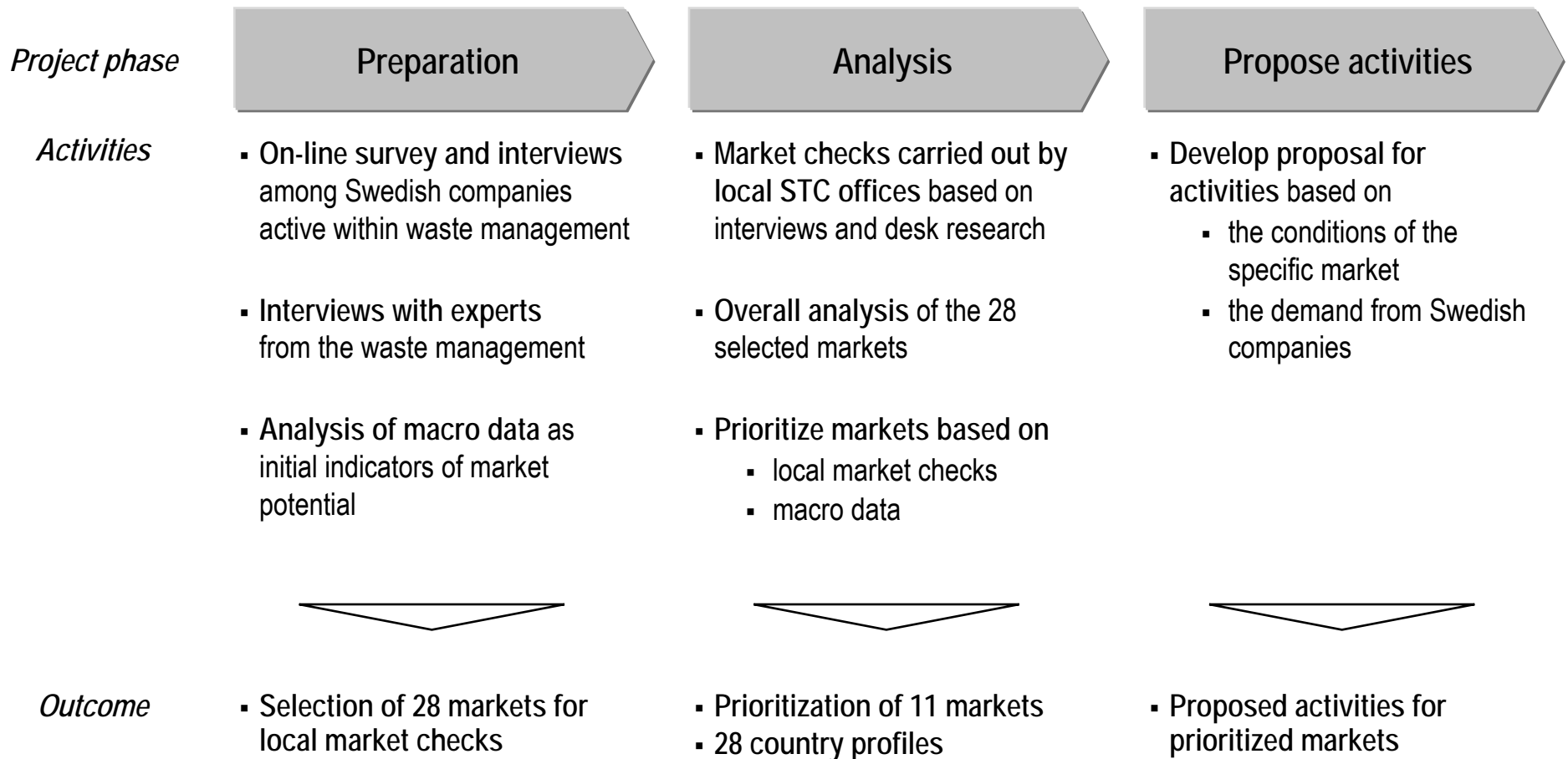
SWEDEN'S EXPORT IS DOMINATED BY LARGE COMPANIES

- Focus of the project should be opportunities for SMEs



However, the presence of large Swedish companies can help as a door opener for SMEs

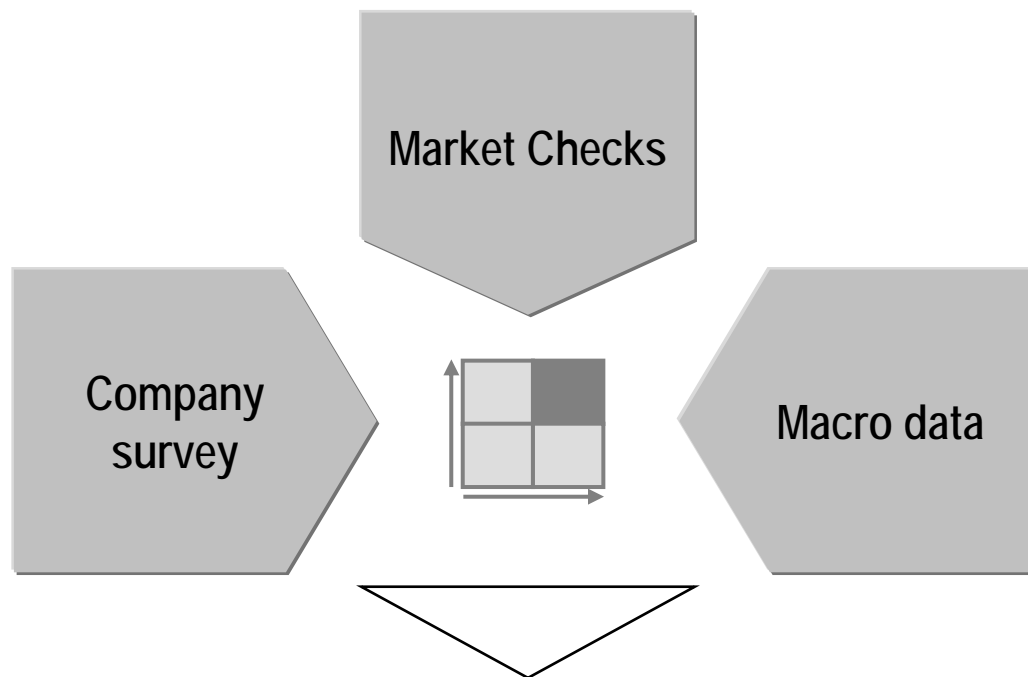
THE PROJECT IS DIVIDED INTO THREE STEPS



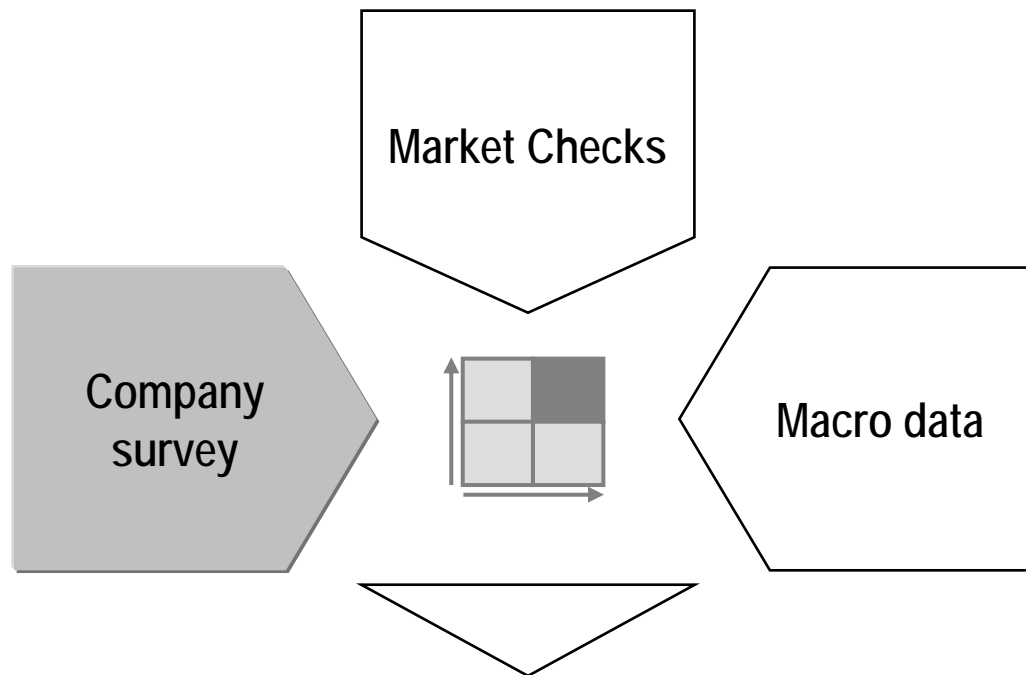
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- Export market analysis
 - The company perspective and macro data
 - Local market checks
- Market prioritization
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THE PRIORITIZATION IS BASED ON INPUT FROM THE COMPANY SURVEY, MACRO DATA AND MARKET CHECKS

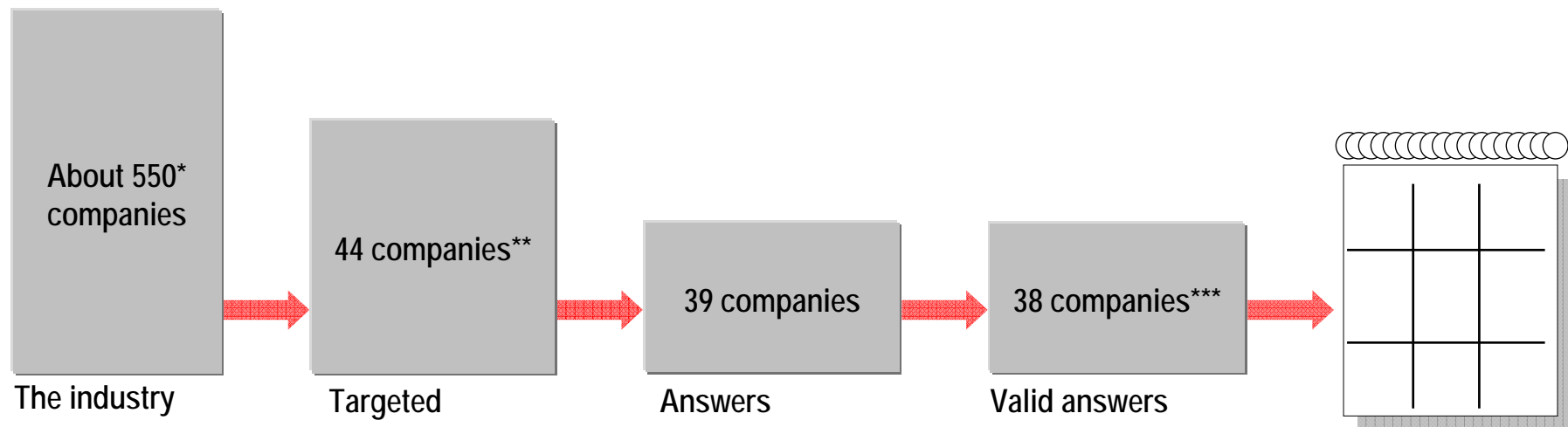


Prioritization of markets



Prioritization of markets

39 COMPANIES NAMED THEIR CURRENT AND PLANNED EXPORT MARKETS VIA AN ON-LINE SURVEY AND INTERVIEWS



A response rate of 86% indicates high commitment from respondents

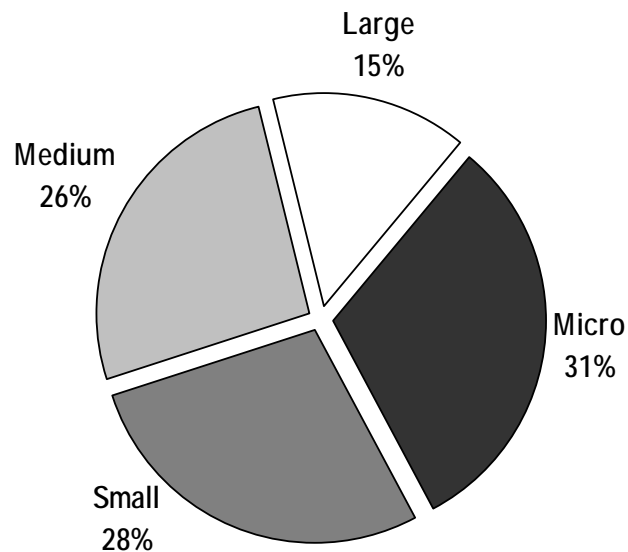
*Swentec

** Companies with export potential according to Swentec

*** See full list in appendix

THE SURVEY SAMPLE REPRESENTS ALL COMPANY SIZES AND ACTIVITIES OF THE INDUSTRY

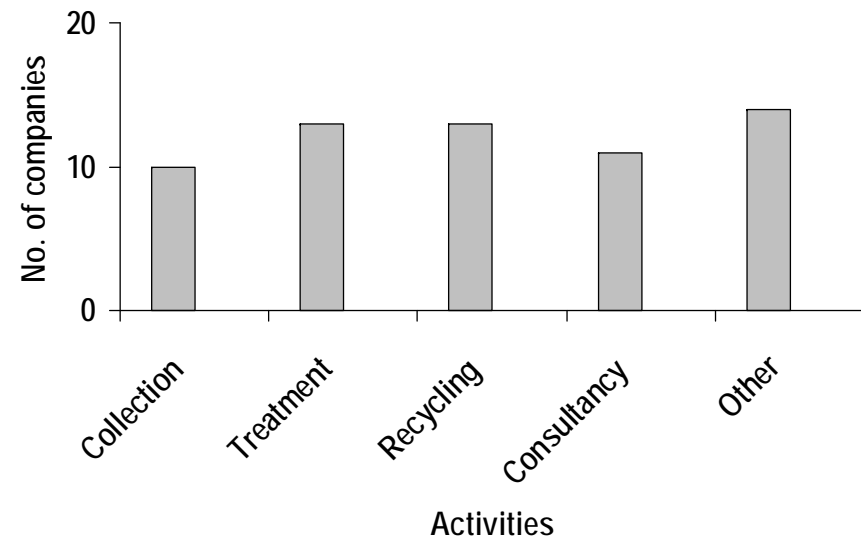
Size of companies in the survey



EU-definitions of company sizes (by turnover):

Micro: ≤ 2 MEUR	Medium: 10-50 MEUR
Small: 2-10 MEUR	Large: > 50 MEUR

Core activities of the companies in the survey*

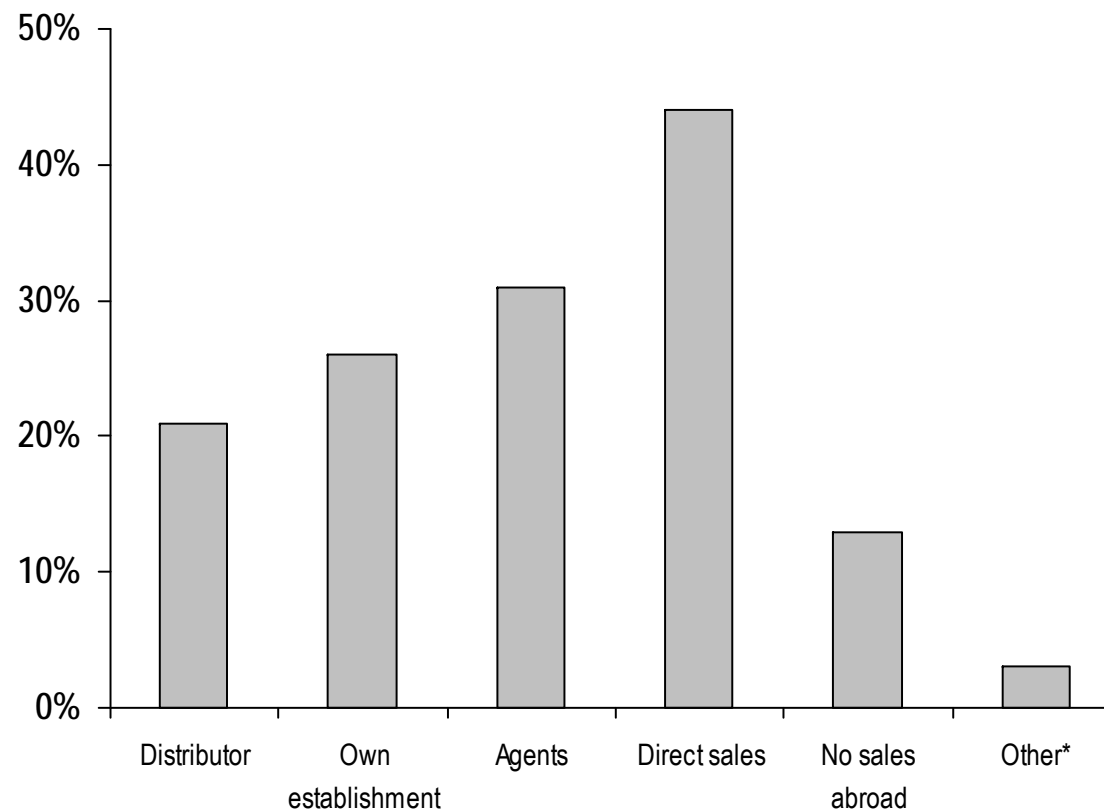


The survey gives a good industry overview



ALMOST HALF OF THE SURVEY COMPANIES HANDLE EXPORT THROUGH DIRECT SALES

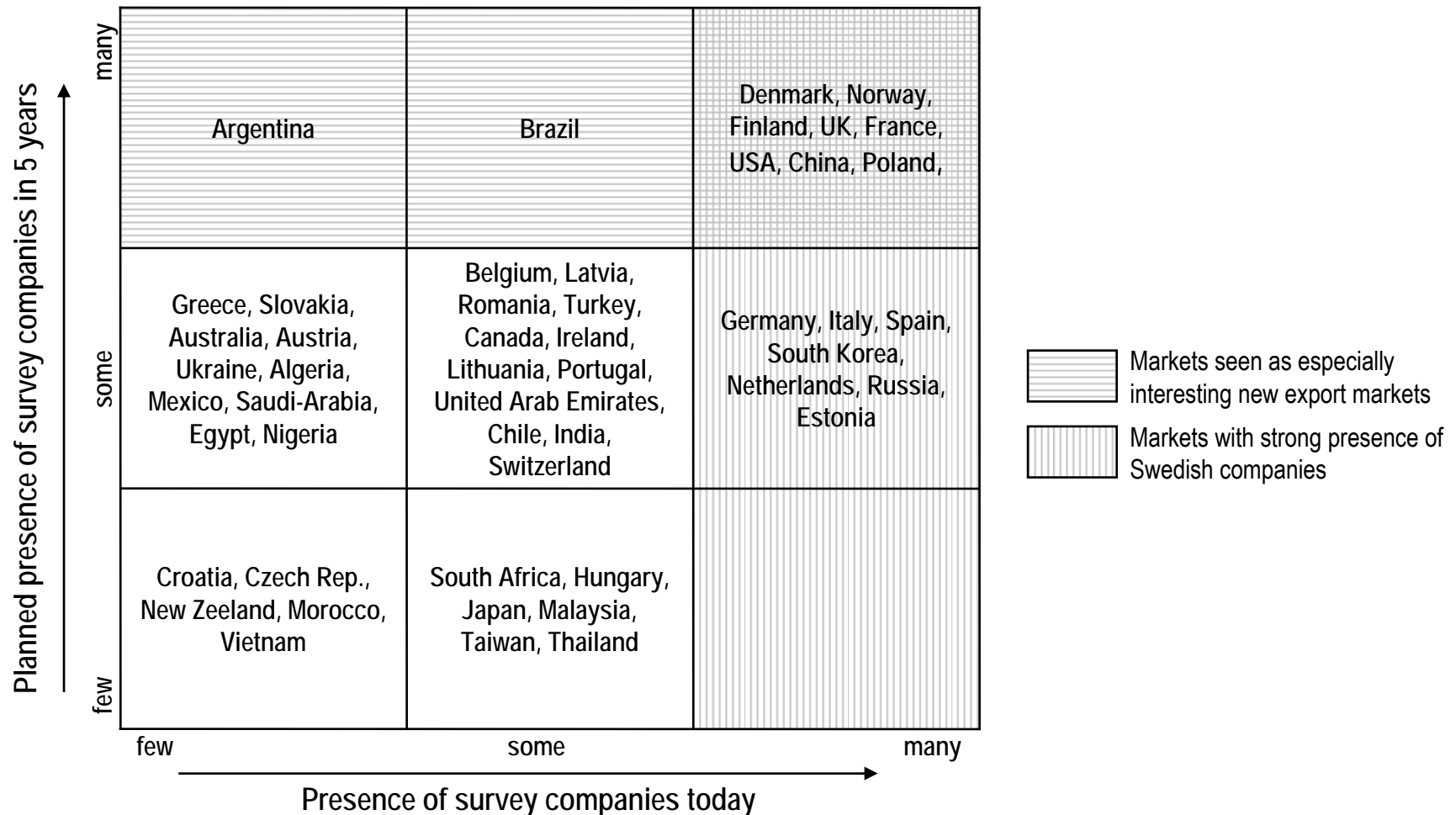
How do your company handle export?



*e.g. Sales from another office, Joint-Venture
Source: STC

PRESENCE AND PLANNED ESTABLISHMENTS OF SURVEY COMPANIES

- Used to make initial prioritization of markets



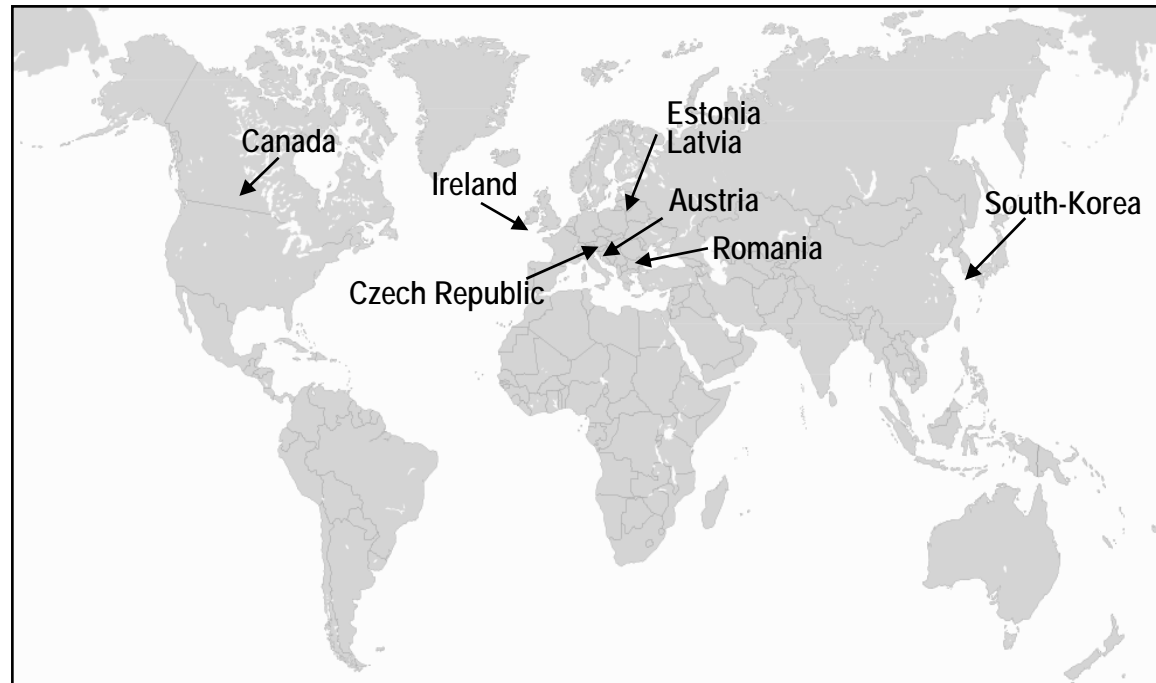
*See appendix for a full list of markets with Swedish presence
Source: STC

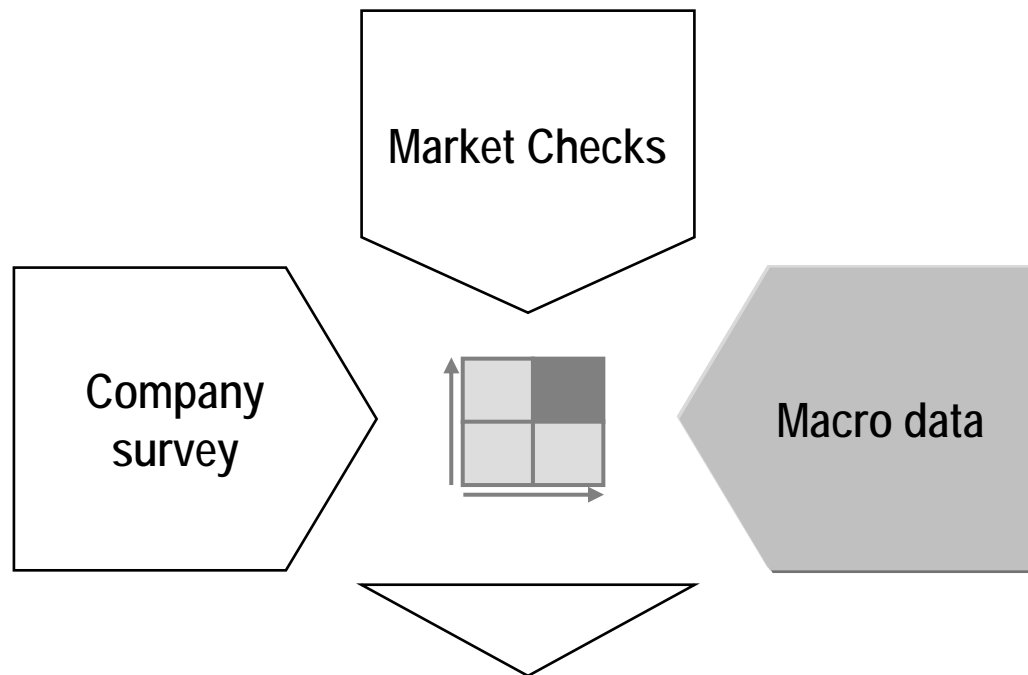
INTERVIEWS WITH A NUMBER OF BRANCH EXPERTS PROVIDED FURTHER INPUT

Experts

A number of experts were asked if there was any of the markets mentioned in the company survey that they recommended.

Here are their answers.

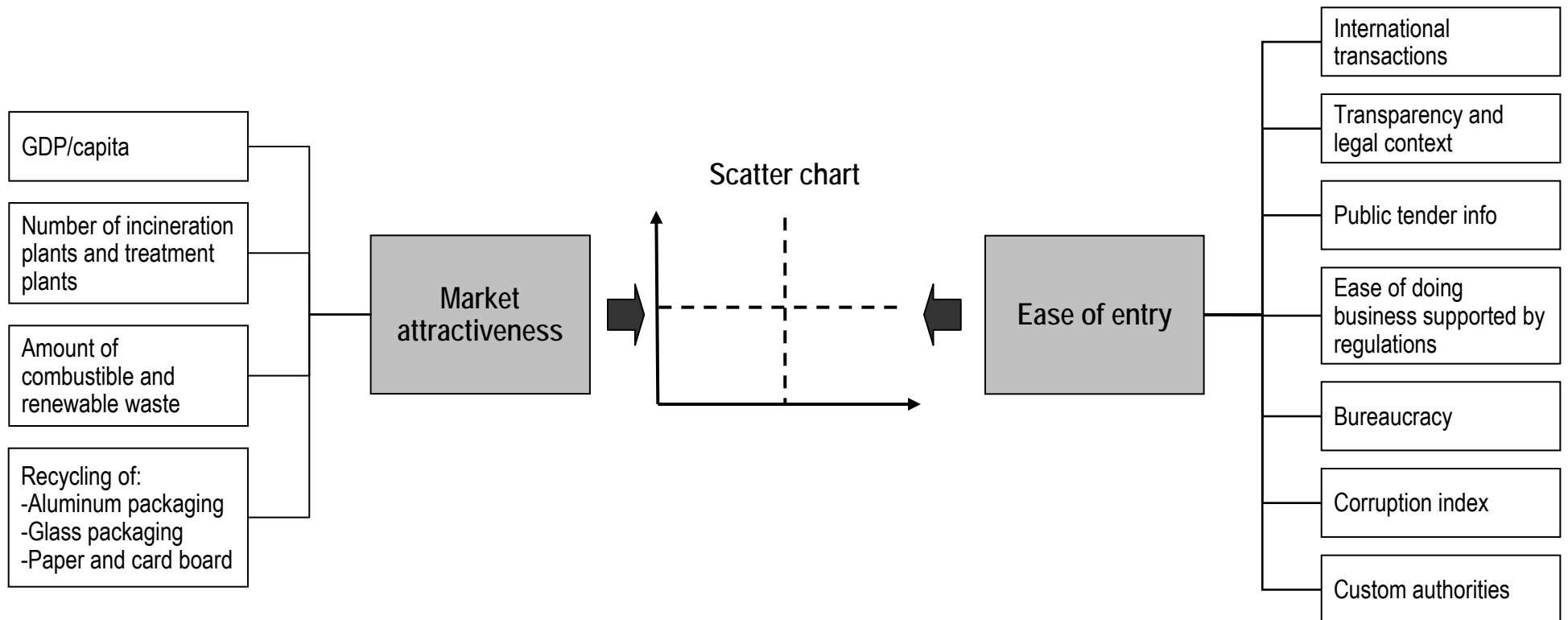




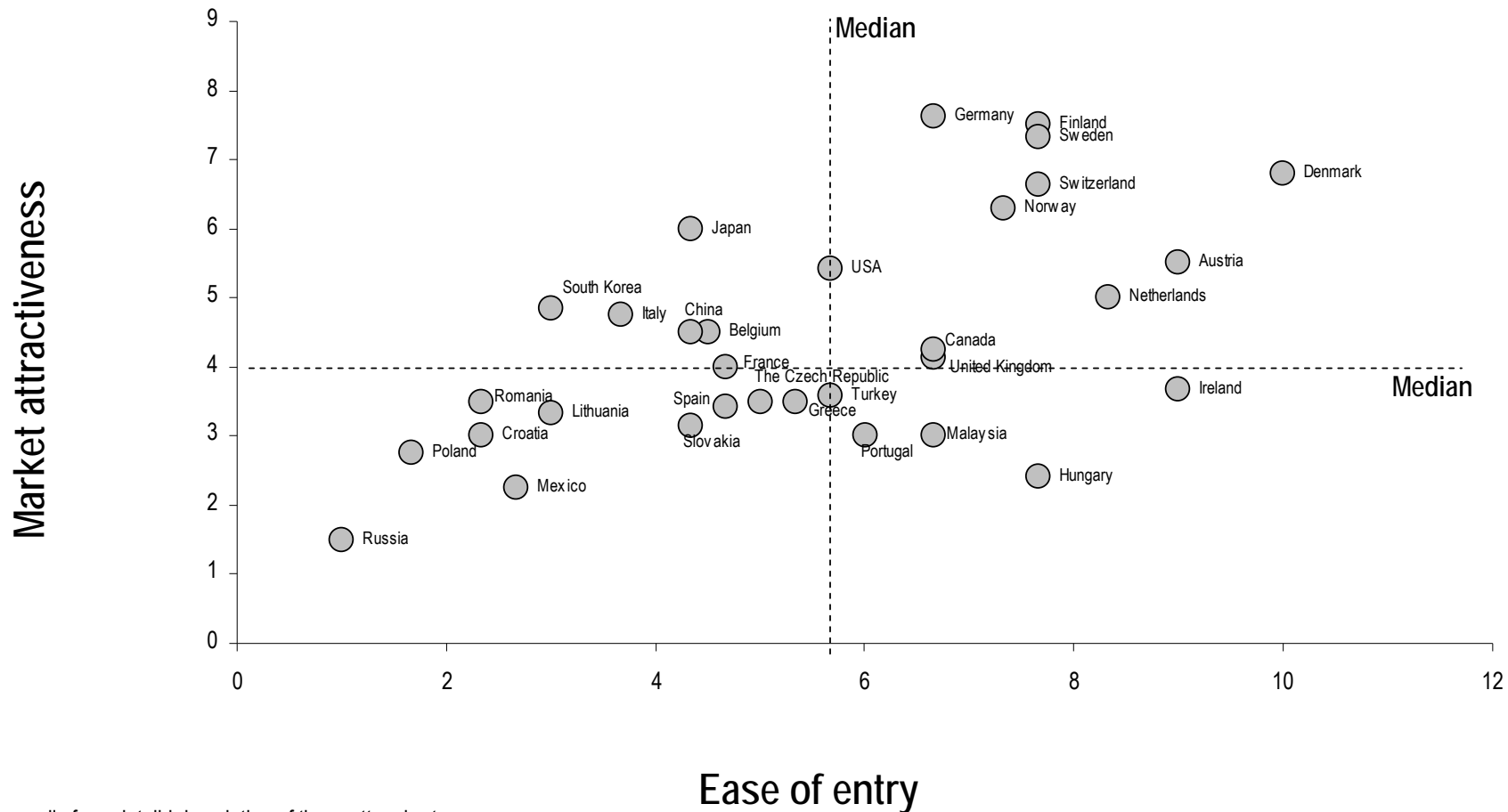
Prioritization of markets

ANALYSIS OF MACRO DATA AS INITIAL INDICATOR OF MARKET POTENTIAL

- The evaluation is based on a number of factors*

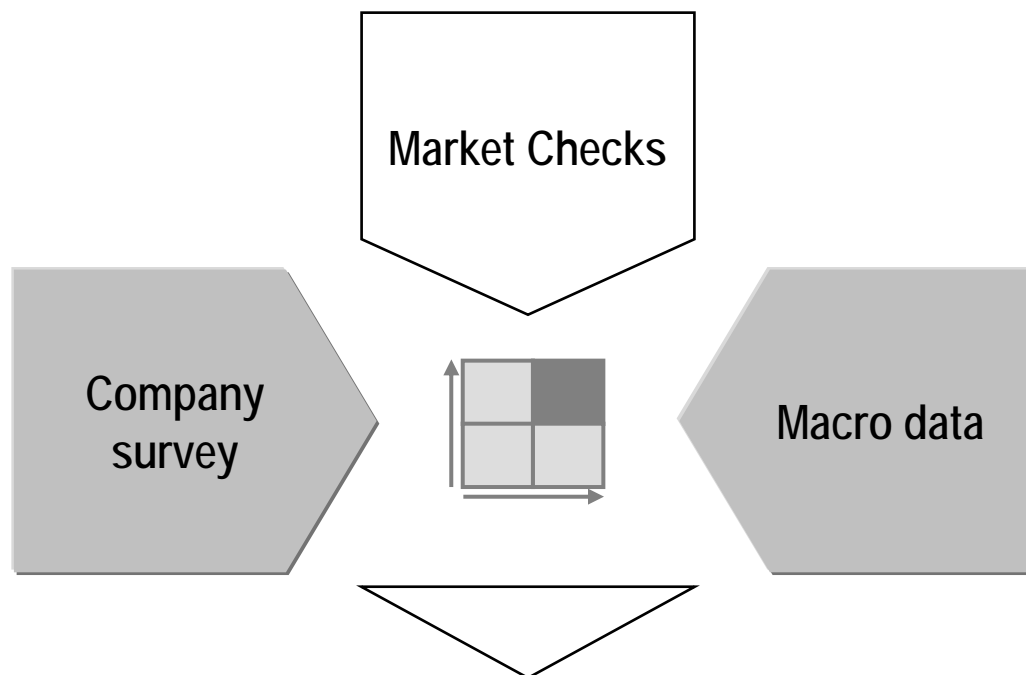


SCATTER CHART GIVES AN OVERVIEW OF THE MACRO DATA



*See appendix for a detailed description of the scatter chart
Source: Euromonitor, World Bank and IMD

THE COMPANY SURVEY WAS USED TOGETHER WITH MACRO DATA TO SELECT COUNTRIES FOR MARKET CHECKS



Prioritization of markets

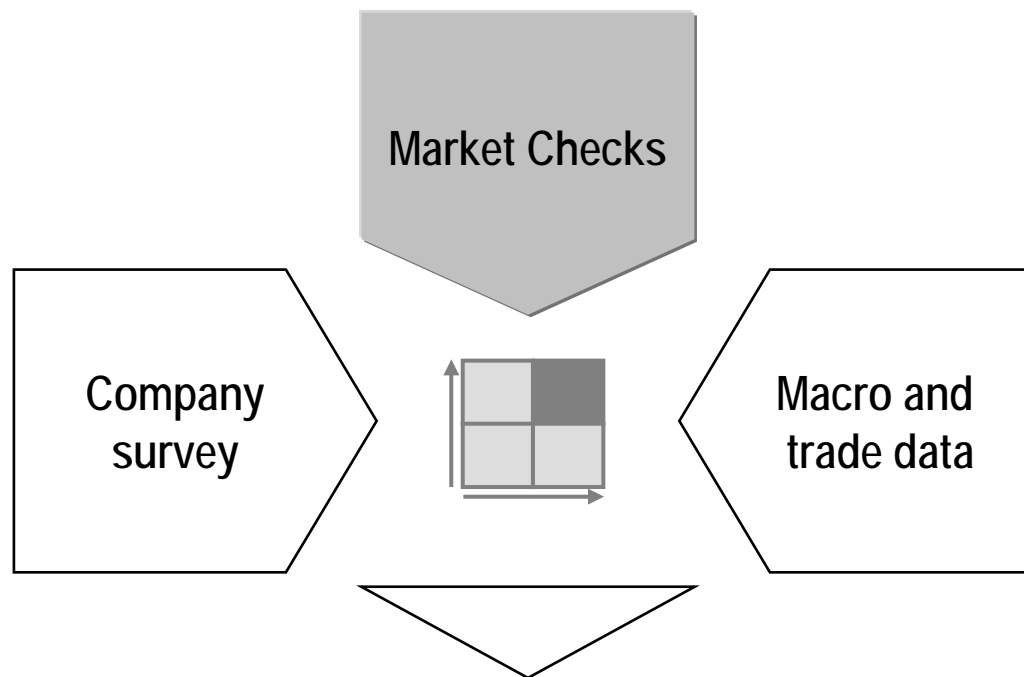
THE 28 COUNTRIES SELECTED FOR MARKET CHECKS

- Carried out by the local STC offices



CONTENT

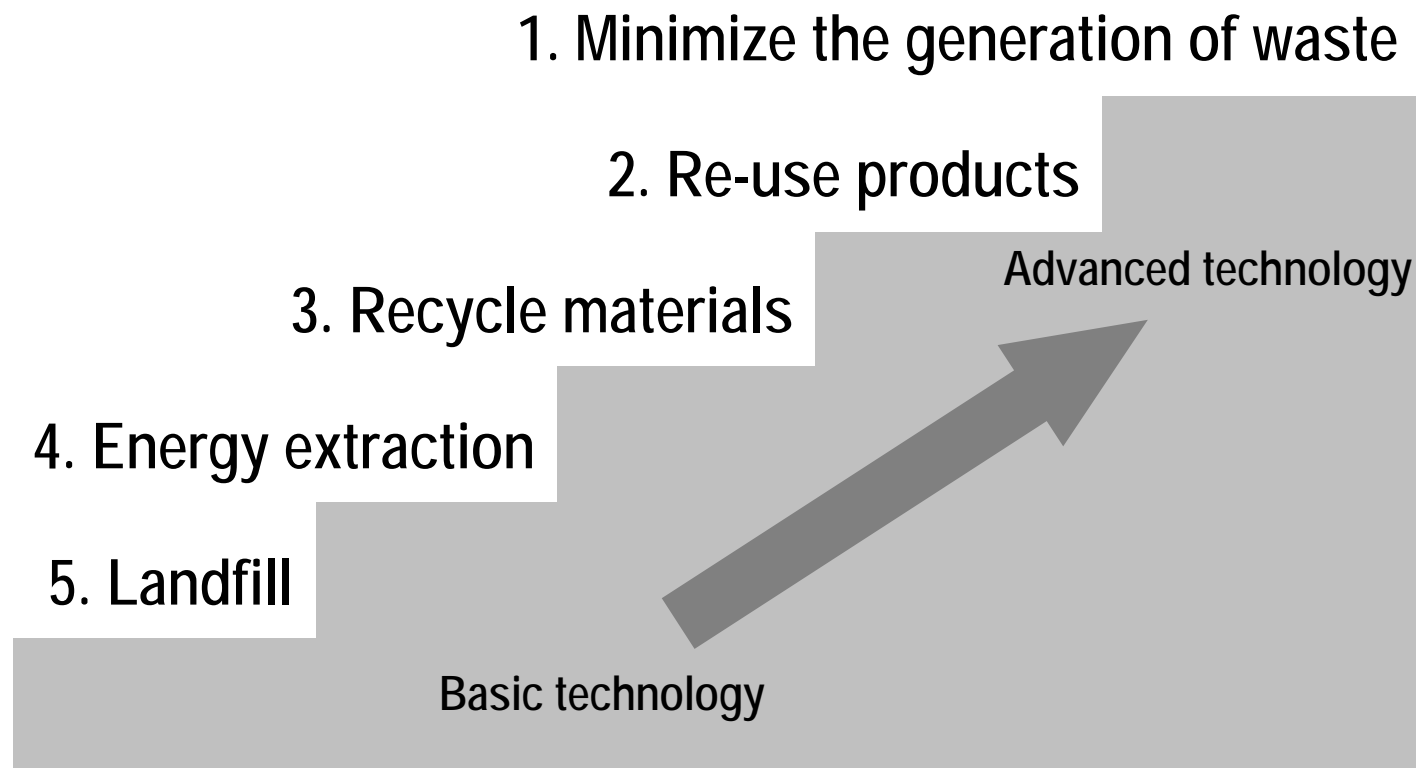
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Prioritization of markets



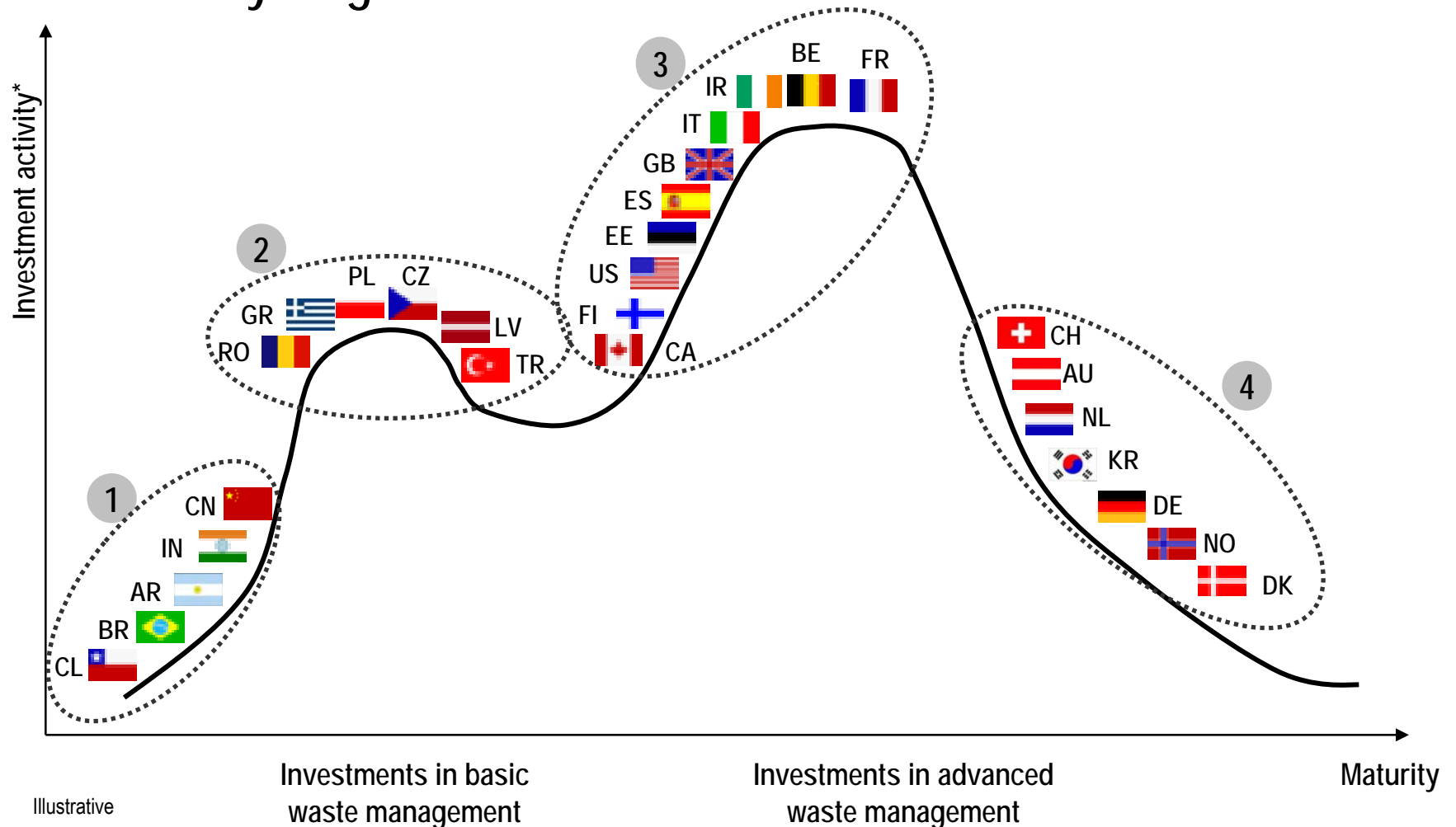
THE MATURITY OF MARKETS IN THE FOLLOWING ANALYSIS IS DEFINED BY EU'S WASTE HIERARCHY



Markets tend to strive upwards the waste hierarchy ladder

THE 28 MARKETS ARE IN DIFFERENT STAGES OF INVESTMENTS IN WASTE MANAGEMENT

- Four maturity stages can be identified



* Investment activity: Rough estimate of yearly investments based on interviews and official data
Source: STC



OPPORTUNITIES EXIST IN ALL OF THE FOUR MATURITY STAGES

1 China, Chile, Argentina, Brazil, India

Emerging markets starting to invest in environmental programs. Invest mainly in basic infrastructure

- Waste management still under developed with a lack of suitable infrastructure. Large part of waste still dumped illegally
- ➔ Business opportunities up-coming. Get into position to benefit from these opportunities

2 Romania, Greece, Poland, the Czech Rep., Turkey, Latvia

Peak investment within land filling technology and starting with incineration

- Are now taking the first steps on fulfilling the EU-standards
- ➔ Good opportunities for suppliers of basic technology with possibilities of EU funding

3 Estonia, USA, UK, Canada, Finland, Spain, Italy, Ireland, Belgium, France

Markets that already have a working basic infrastructure

- Are now investing in order to increase shares of incineration and recycling while decreasing the share of land filling
- ➔ Focus for suppliers of technology solutions within incineration and recycling

4 Switzerland, Austria, Netherlands, South Korea, Germany, Norway, Denmark

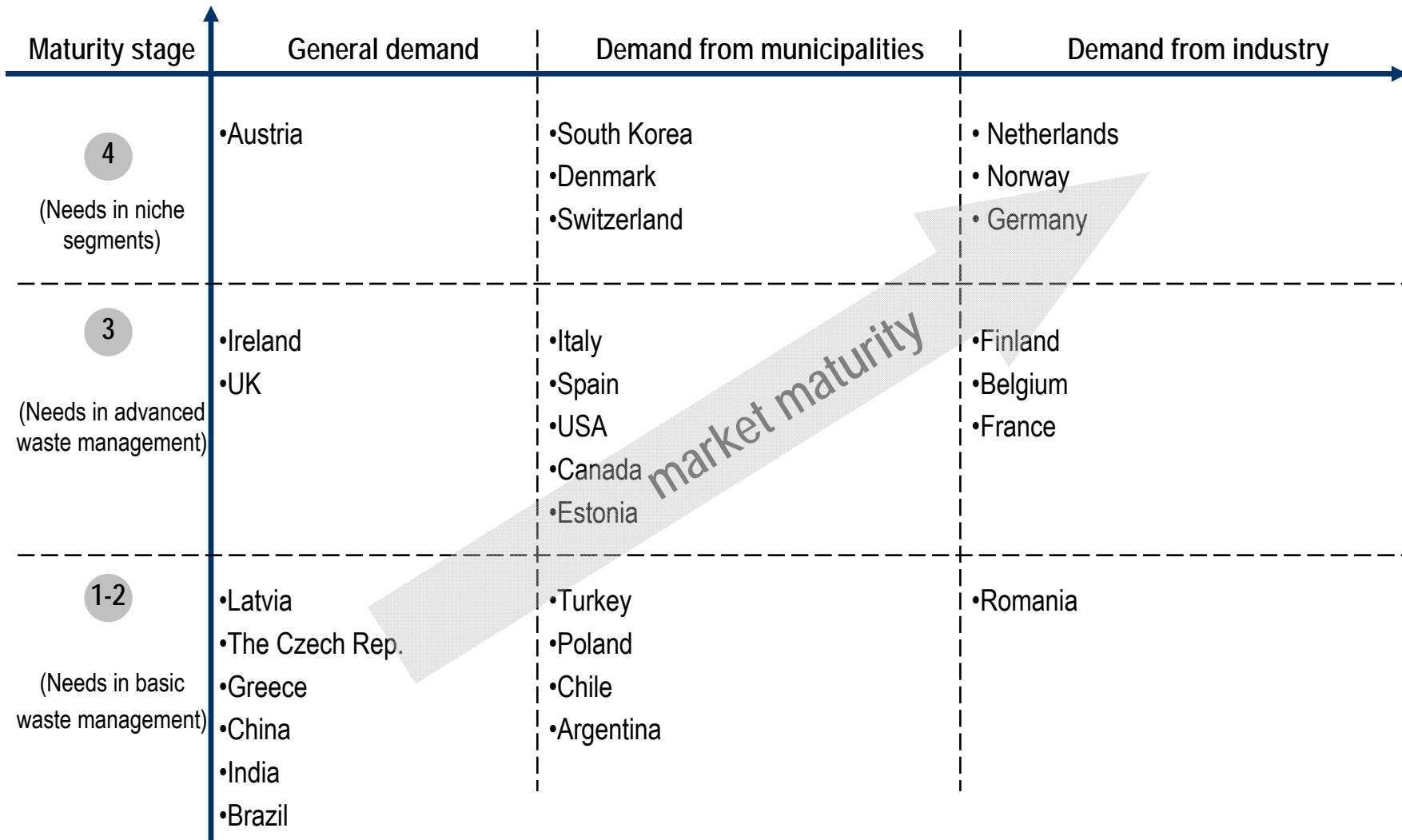
Markets with the most developed and advanced waste management industry

- These markets focus on reducing the amount of waste generated
- ➔ Opportunities for advanced technologies in niche segments

Companies should focus on markets with demand matching their expertise

MARKET DEMAND VARIES WITH MATURITY STAGE

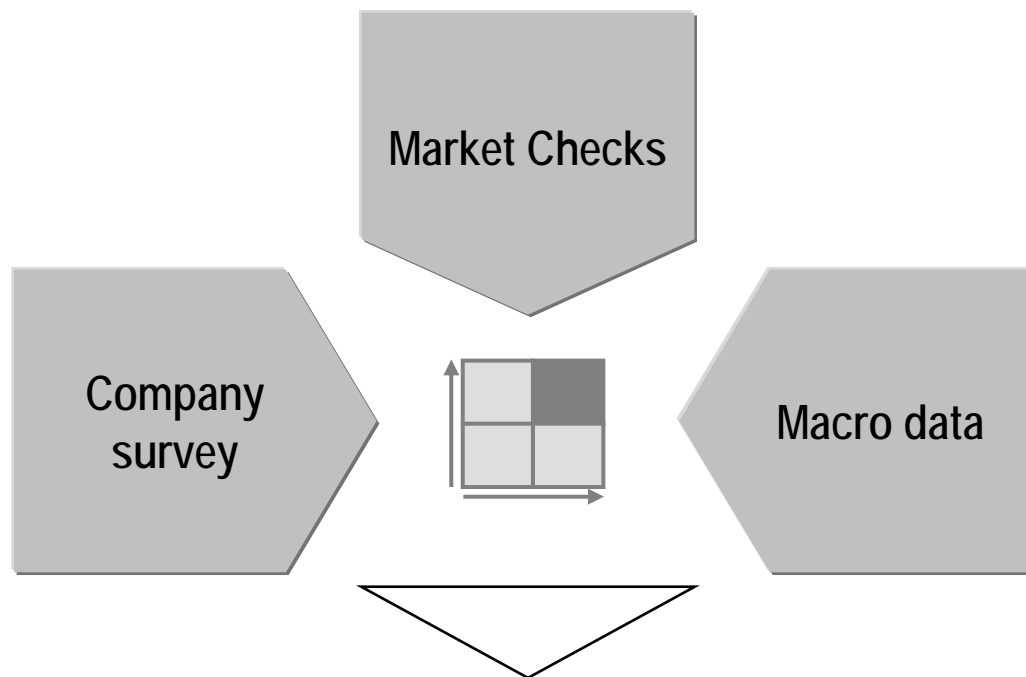
- Evolves from general needs to specific demand from industry



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THE FINAL PRIORITIZATION WAS BASED ON INPUT FROM THE COMPANIES, MACRO DATA AND THE MARKET CHECKS

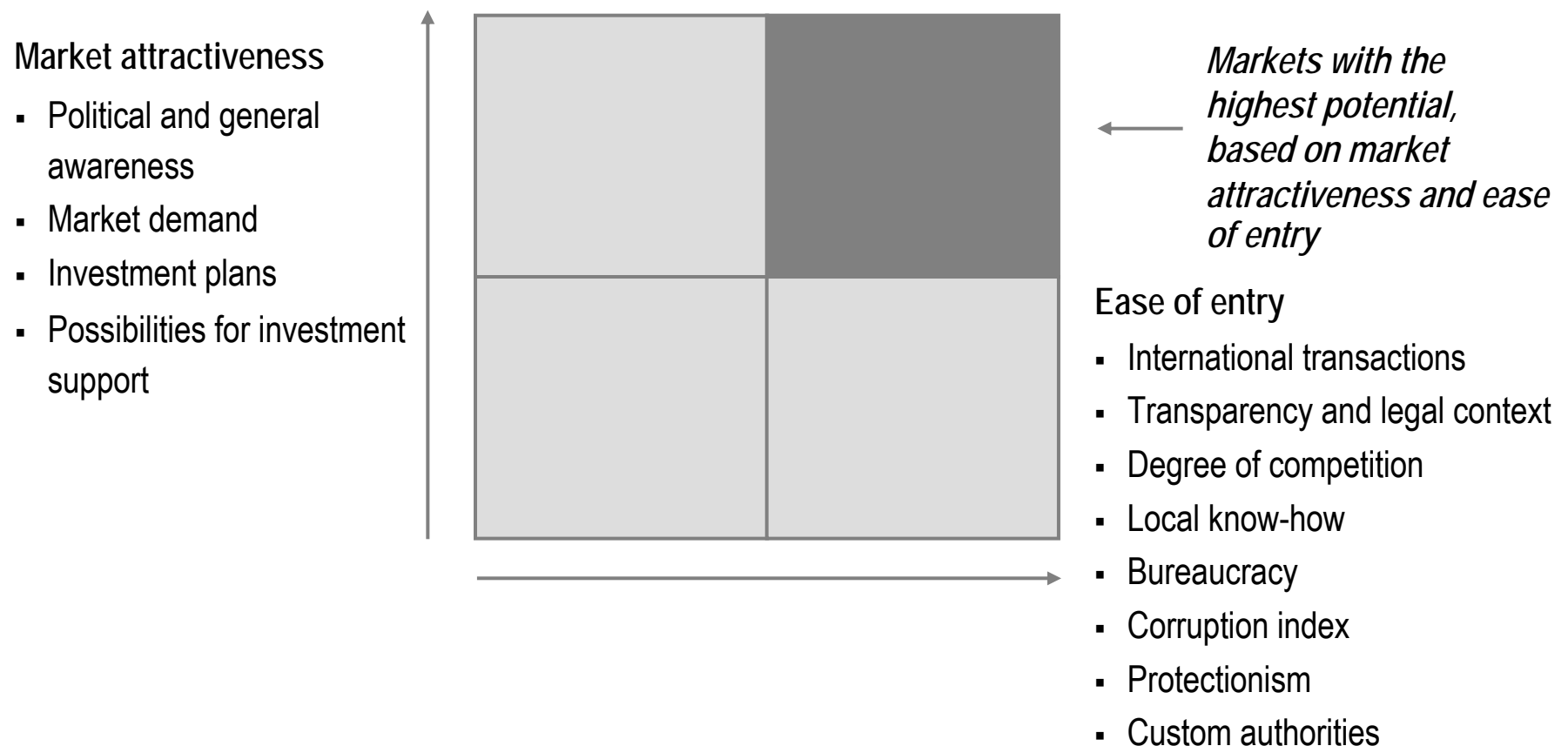


Prioritization of markets



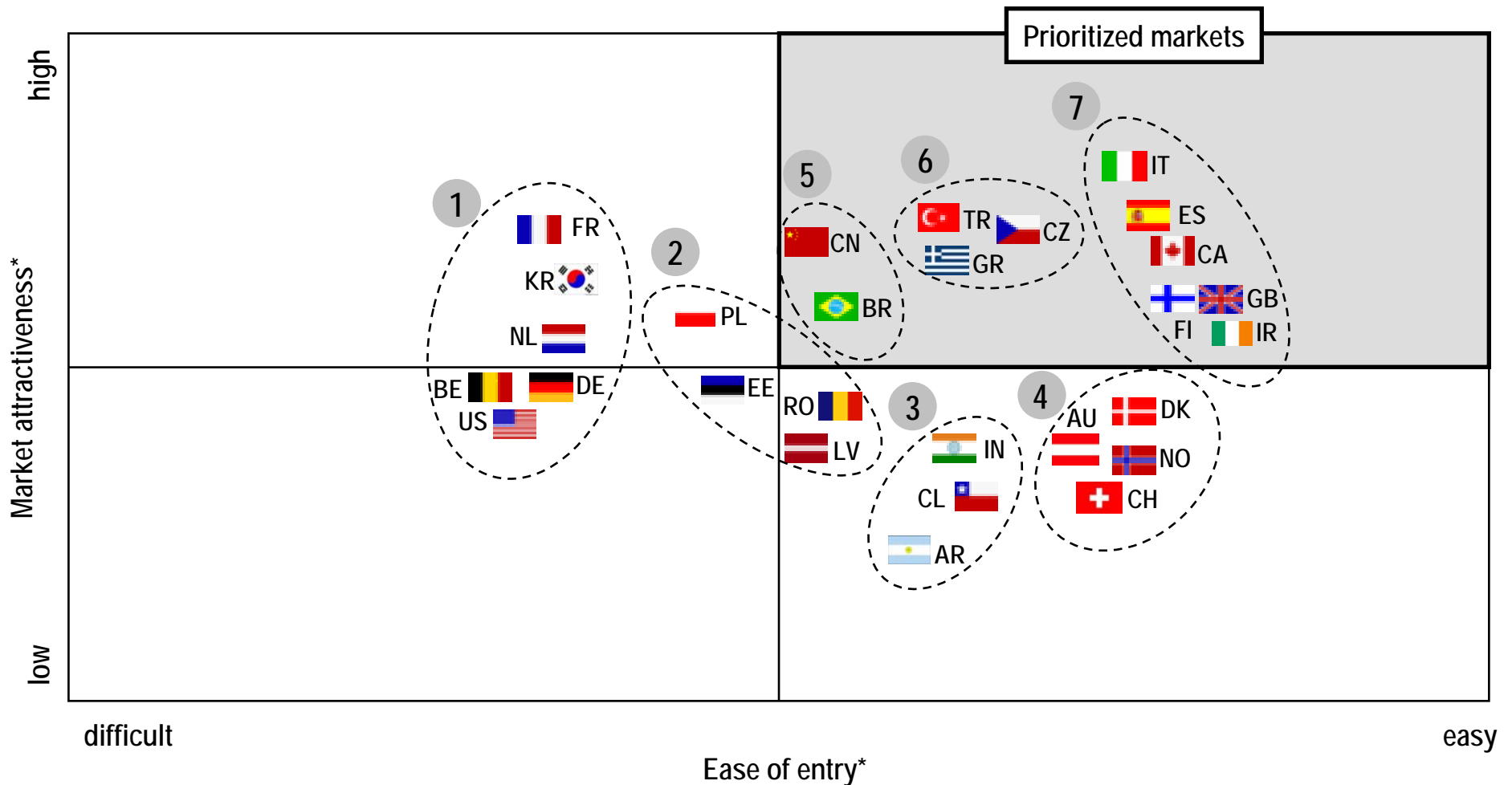
MARKET POTENTIAL ASSESSED BY ATTRACTIVENESS AND EASE OF ENTRY

- The assessment builds on input from the market checks



11 MARKETS SEEMS TO HAVE A HIGHER PRIORITY FOR SWEDISH WASTE MANAGEMENT COMPANIES

- Seven clusters can be identified

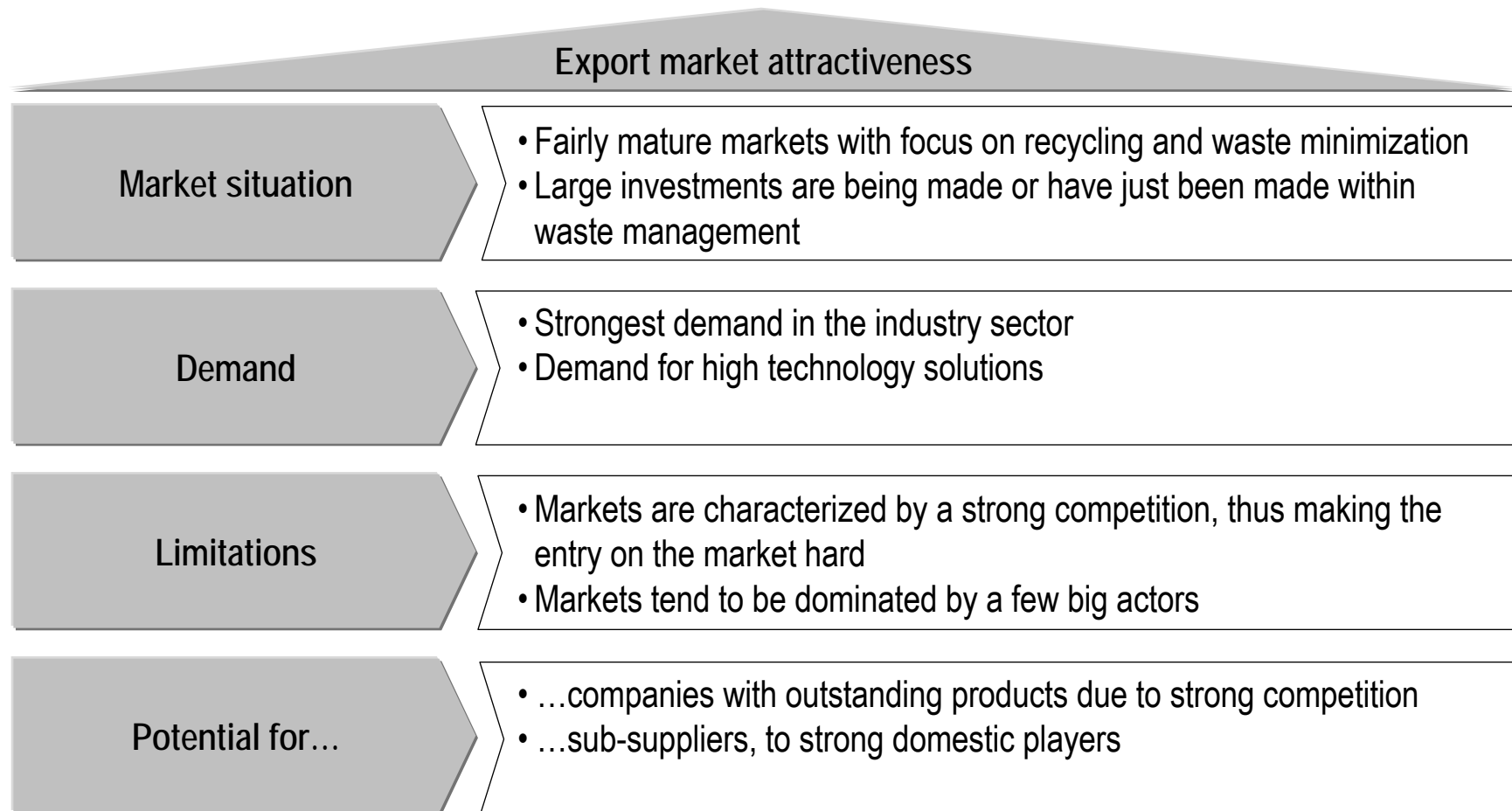


* Illustrative
Source: STC



CLUSTER 1 – FRANCE, BELGIUM, NETHERLANDS, GERMANY, USA AND SOUTH-KOREA

- Mature markets with strong demand but high competition





CLUSTER 2 – ESTONIA, POLAND, ROMANIA AND LATVIA

- Access to EU-funding and growing need for mid-level solutions





CLUSTER 3 – INDIA, ARGENTINA AND CHILE

- Emerging markets with demand likely to increase





CLUSTER 4 – AUSTRIA, SWITZERLAND, NORWAY AND DENMARK - Demand for high-tech solutions but decreasing overall investments

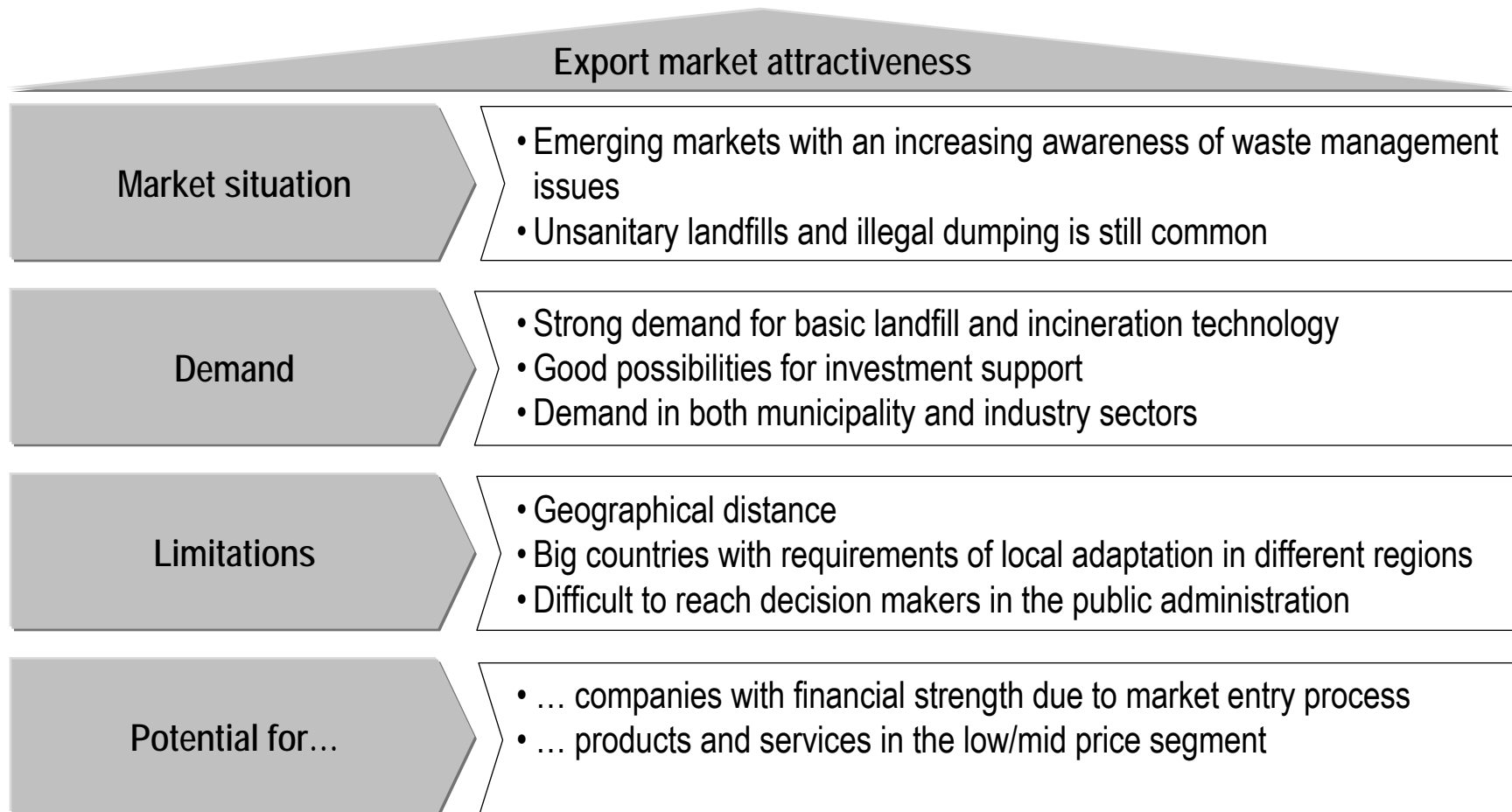


* Niche technology i.e. handling of electronic components, biogas systems....
Source: STC



CLUSTER 5 – CHINA AND BRAZIL

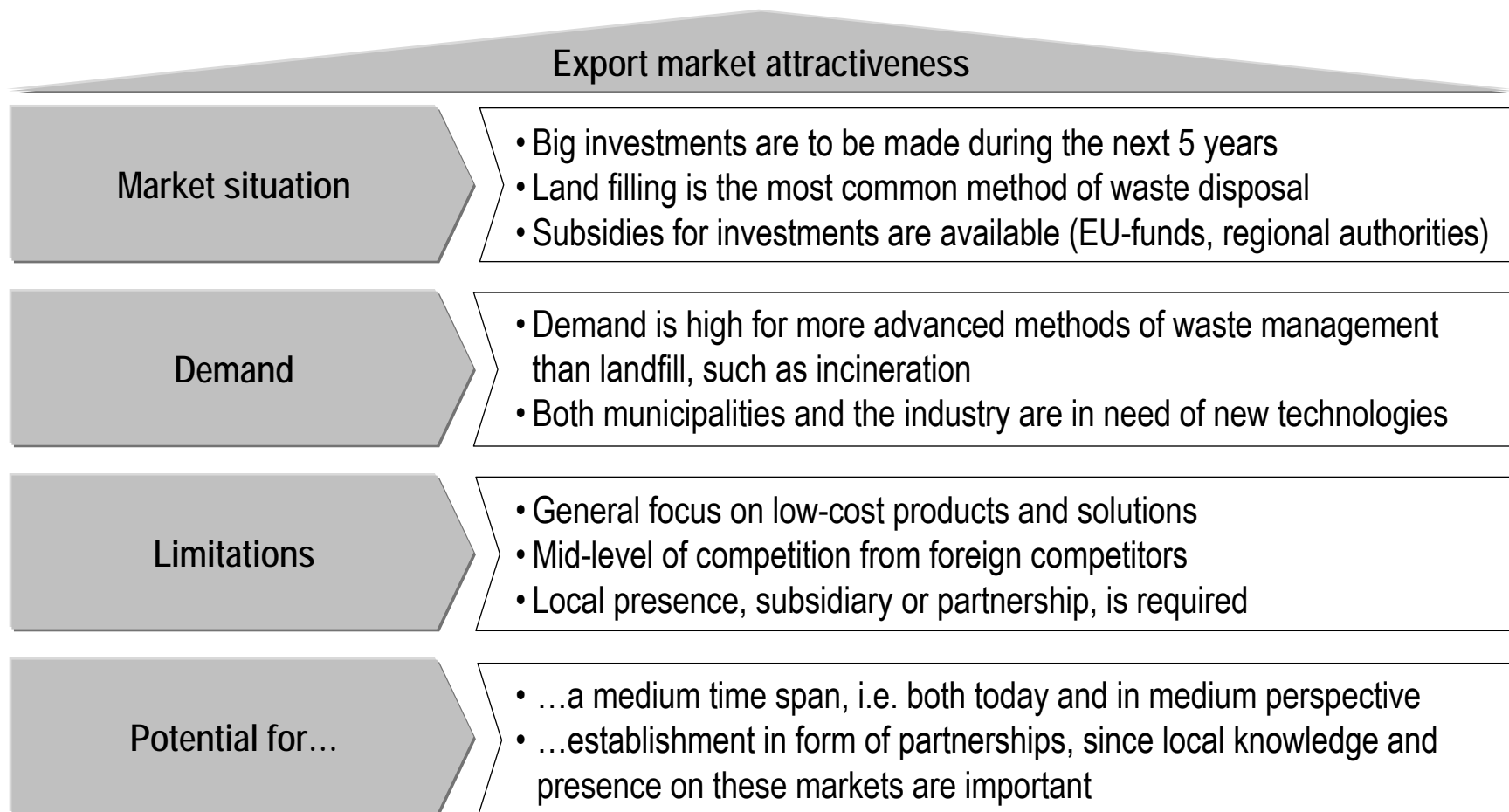
- Increased awareness of waste management and strong demand





CLUSTER 6 – TURKEY, GREECE AND THE CZECH REPUBLIC

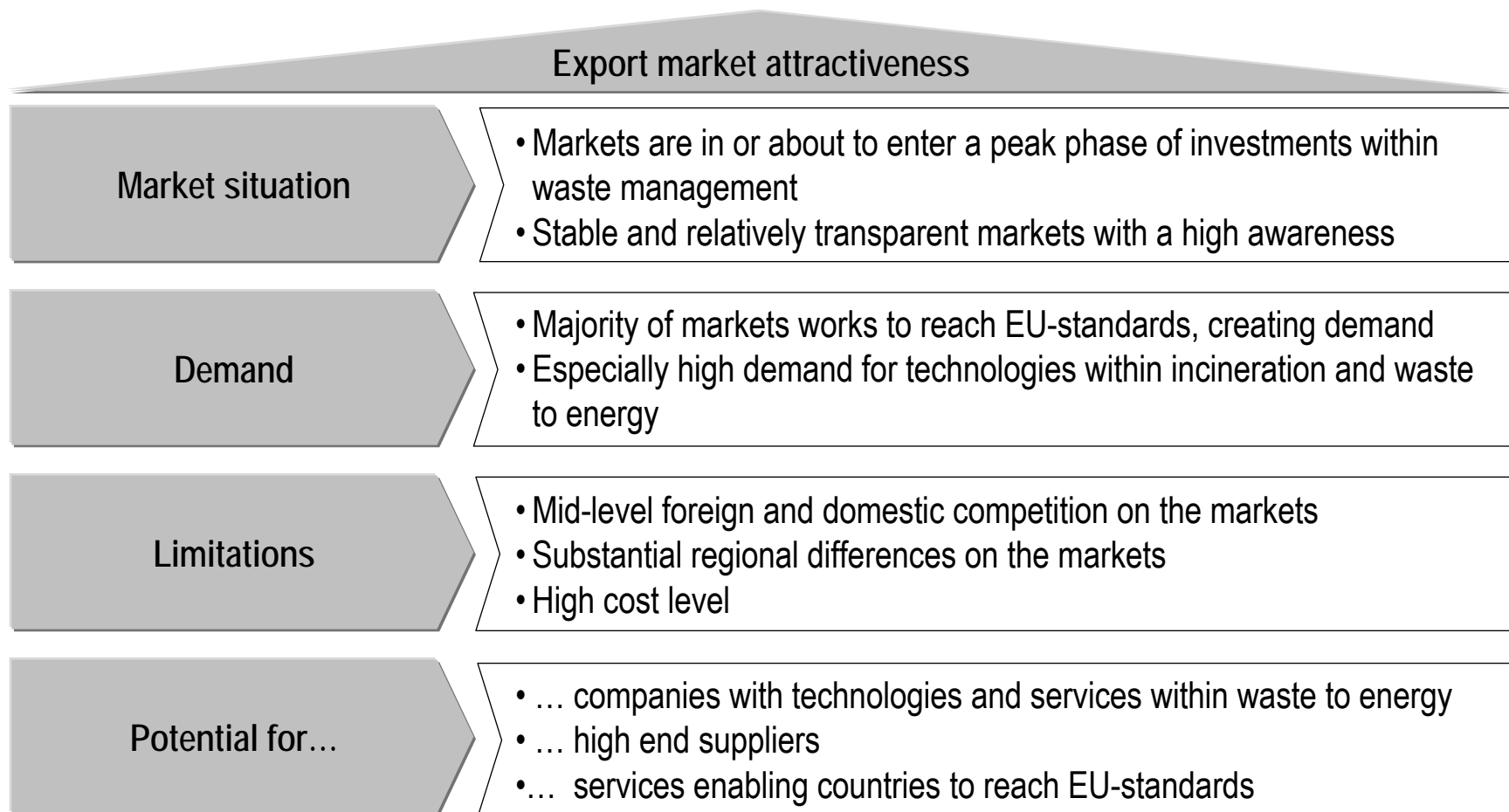
- Big investments are planned but local presence is required





CLUSTER 7 – ITALY, SPAIN, IRELAND, FINLAND, UK AND CANADA

- Large investments to reach EU-standards and mid-level competition

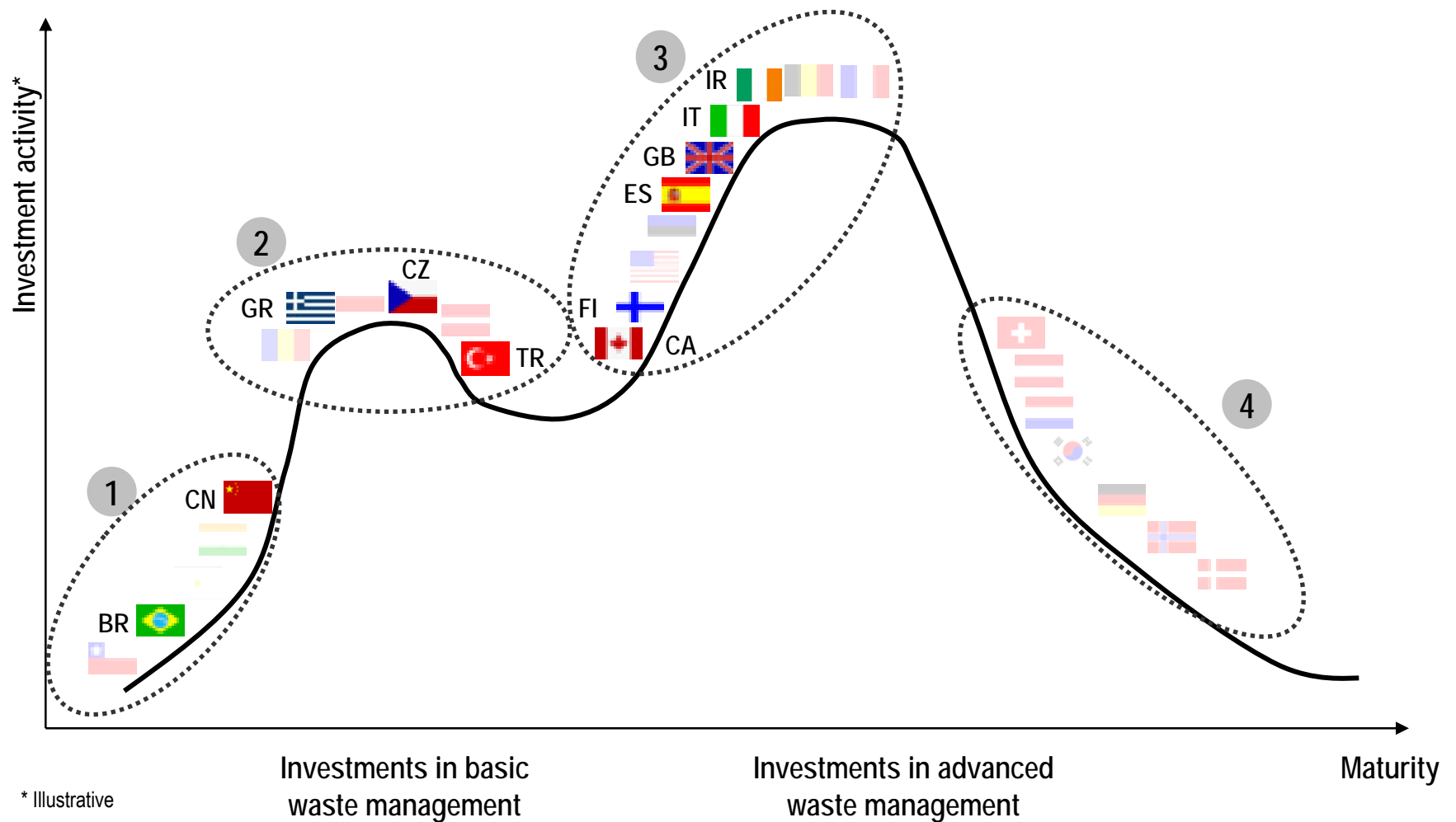




OF 28 ANALYSED MARKETS 11 WERE PRIORITIZED FOR FURTHER ACTIVITIES

Input – 28 markets*					
Americas	S. Europe	W. Europe		Central & Eastern Europe	Asia
Argentina Brazil Canada USA Chile	France Spain Italy Turkey Greece	Austria Belgium Denmark Finland Germany	Ireland Netherlands Norway UK Switzerland	Czech Republic Estonia Latvia Poland Romania	China South Korea India
Output – 11 markets*					
Americas	S. Europe	W. Europe		Central & Eastern Europe	Asia
Brazil Canada	Spain Italy Turkey Greece	Finland Ireland UK		Czech Republic	China

PRIORITIZED MARKETS' MATURITY RANGES FROM LOW TO MEDIUM



* Illustrative



SEVERAL SWEDISH COMPANIES ARE ALREADY PRESENT ON PRIORITIZED MARKETS

MARKET	EXAMPLE OF COMPANIES ALREADY ESTABLISHED
Brazil	Metso Power AB, IVL Svenska Miljöinstitutet AB, Opsis AB, Scandinavian Biogas, MRT System International AB
Canada	Opsis AB, Rotech Recycling Technology, Röbbäcks Sweden AB, Scandinavian Enviro System
China	Metso Power AB, Envac, IVL Svenska Miljöinstitutet AB, Läckeby Water, Opsis AB, MRT System International AB, Scandinavian Enviro System
Czech Rep.	Norba AB, Opsis AB
Finland	Metso Power AB, Norba AB, SAKAB, Orwak AB, Opsis AB, H. A. Industri AB, Röbbäcks Sweden AB, Franssons Recycling Machines, Botek Systems AB, Eleiko AB, Optibag, FluxSense AB, Avfallskvarn Disposer AB
Greece	Norba AB, Opsis AB
Ireland	SAKAB, Opsis AB, MRT System International AB, Optibag
Italy	Metso Power AB, Envac, Norba AB, IVL Svenska Miljöinstitutet AB, Orwak AB, Opsis AB, Franssons Recycling Machines, Eleiko AB, MRT System International AB, Optibag
Spain	Envac, Norba AB, Orwak AB, Opsis AB, Presona AB, Franssons Recycling Machines, Flexus Balasystem AB, MRT System International AB, Optibag
Turkey	Opsis AB, Presona AB, Flexus Balasystem AB, MRT System International AB
UK	Envac, Norba AB, Orwak AB, Opsis AB, Presona AB, Rotech Recycling Technology, GISIP, Flexus Balasystem AB, MRT System International AB, Optibag, Scandinavian Enviro System

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HOW DO SWEDISH COMPANIES BECOME SUCCESSFUL INTERNATIONALLY?

Success factors

- Focus on export markets where demand matches company expertise
- Get a good understanding of market specificities when developing strategy
- Implement a long term strategy for export markets, and follow it

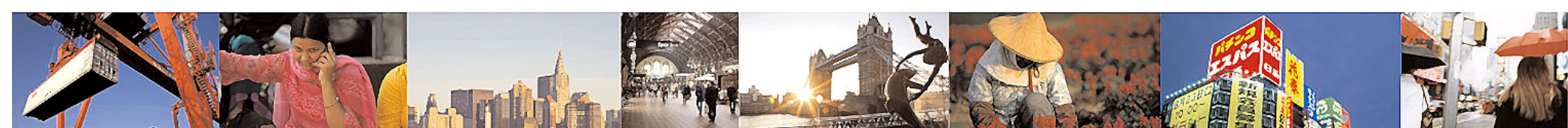


STC can support in all of these steps



STC SERVICES FOR SWEDISH WASTE MANAGEMENT COMPANIES

- Regional export Advisors (Personal export advising)
- Business opportunity project: market check + visiting program + action plan
- Export office
- Business support office services
- Delegation trip – matchmaking
- Monitoring – business intelligence
- Market analysis
- Market selection analysis
- Fairs
 - Swedish-pavilions
 - Nordic pavilions
- Establishment strategies
 - Incorporation
 - Acquisition
 - Sales strategies
 - Customer/partner search
 - Competitor analysis
- And more



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- **Appendix**
 - Country profiles
 - Market data
 - Survey companies

LOCAL MARKET CHECKS CARRIED OUT BY STC OFFICES ON RESPECTIVE MARKET

- For more information about each market, do not hesitate to contact our local offices
 - Contact details can be found on respective slide



ARGENTINA

- Slowly developing in solid waste management issues

Country facts		Waste management usage (if available):	
Population:	39,1 m	in industry	n/a
GDP/capita:	\$ 8 695	in municipalities	n/a
average GDP growth over 5 years:	n/a %		
Swedish export:	\$ 702 m		
Swedish export, avg growth 5 years:	n/a %		

Waste management facts

- Buenos Aires Metropolitan Area concentrates 40% of total population and 65% of the total solid waste.
- A 90% of total SW generated is collected, but 60% is disposed in open dumps with no proper control. There are estimated to be over 2000 open dumps along the country
- The level of consciousness of and education in solid waste management (SWM) is low among the population
- At the government level, there is a slowly increasing awareness. However this has not yet led to any effective plans or actions. Enforcement of current regulation is weak
- Since 2006, the government is developing, through the Secretariat of Environment, the National Solid Waste Management Program to achieve sustainable waste management activities in the country by 2026
- The SWM market was estimated in 340 MUSD in 2006: 50% for urban solid waste, 35% for industrial solid waste and the rest for pathological waste



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ARGENTINA

- Still low awareness and therefore low willingness to pay

Business opportunities

- Some business opportunities are developing both in the municipal and industrial sector. In the former, small and medium scale solutions; in the later, solutions for the automotive, petrochemical and construction industries.
- There is potential both for technology and consultancy services.
- Highest demand within land fill technology, as compelled by new regulations

Challenges

- Little government determination to develop actions for sustainable SWM and enforce current regulations.
- Low willingness to pay for environmental issues
- No systemized information on the sector impedes a proper identification of potential business.
- Some degree of local competition in SWM facilities.
- Competition from abroad, mainly from US and EU countries (Germany, Netherlands, etc).
- Low public awareness of Swedish waste management technology offering.

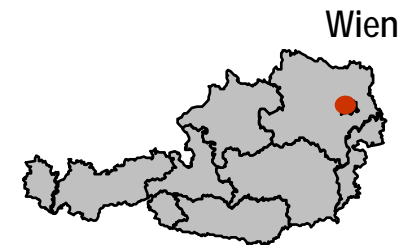
Conclusion

- Argentina's SWM market is growing slowly in hand with a low political will and population consciousness, generating a medium-low level of business opportunities for Swedish companies.
- Despite this, some projects are taking place both in the municipal and industrial segments creating some business opportunities.
- It is expected that the current waste situation in the Metropolitan Area, that has already imposed changes in regulation, will generate new and larger projects both for landfill construction and operation, as well as for waste reduction and valorization.
- Swedish companies could benefit from entering the market at this early stage as the can expect having an expansion when larger projects are developed

AUSTRIA

- Is a mature market for waste management

Country facts		Waste management usage:	
Population:	8,2 m	In total	54 million tons/ year
GDP/capita:	\$ 26 110		
average GDP growth over 5 years:	n/a		
Swedish export:	\$ 4,5 bn		
Swedish export, avg growth 5 years:	n/a		



Waste management facts

- Austria is a country with high environmental awareness in general – as within waste management
- Waste usage in Austria for 2004 estimated to 54 million tons/year – an increase with 10% from 2001
- Austria belongs to one of the early adapters in the European Union when it comes to waste management and has set up additional ambitious national goals
- Waste management is regulated nationally in the Waste Management Act (AWG) 2002
 - The national plan “Bundes-Abfallwirtschaftsplan” sets the framework for Austrian waste treatment
 - Much of the legislation is also regulated on federal level
- Funding and initiatives within waste management come from national, federal and private actors
- There are about 2500 plants for waste treatment in Austria
- Waste Management is a prioritized topic next to other environmental aspects in Austria
- One of the areas where waste has raised most concern is within excavated materials

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AUSTRIA

- Business opportunities for companies with niche solutions

Business opportunities

- Swedish companies can benefit from their reputation and high focus on environmental aspects in Austria
- Segments with opportunities for Swedish companies:
 - Could be both for municipalities and industry
- Demand for highly developed solutions that can meet the need of “newer” types of waste
 - E.g. need for niche solutions within construction material and other complicated waste like electronic components

Challenges

- Austrian technology within waste management is very well developed
- Not one large investment budget nor legislation
 - Regulated differently in different states
- “Made in Austria” phenomenon in general within environmental solutions in Austria as the country has strong solutions by themselves
- Austria has competence in consulting and planning of waste plants as well as classical waste disposal solutions

Conclusion

- The Austrian market is a mature market for waste management solutions and Austria has a strong domestic industry
- Besides for waste treatment in construction and electronic sector, biogas waste is a prioritized sub sector
- Waste treatment and management is an emphasized sector which asks for new technology and solutions
- Construction industry is expecting a moderate growth next years which can have impacts on waste management
- Swedish companies that have a special and mature technology could benefit on this market – otherwise more difficult to differentiate due to fierce competition

BELGIUM

- Strong international companies on the market

Country facts		Waste management usage (if available):	
Population:	10 m	in industry	n/a
GDP/capita:	\$ 24 541	in municipalities	n/a
Average GDP growth over 5 years:	2 %		
Swedish export:	\$ 6,8 bn		
Swedish export, avg. growth 5 years:	14 %		

Waste management facts

- Waste management has a turnover of 1,5 billion € in Belgium
- Approximately 8.000 persons are working in the sector – 5000 people in Flandern, 2500 in Wallonia and 500 persons in Brussels.
- Large international actors are present on the Belgian market. The most important companies are SITA, INDAVOR, SHANKS, VAN GANSEWINKEL and VEOLIA
- All decisions regarding waste management are taken on a regional level by OVAM, O.W.D. or BIM/IBGE



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BELGIUM

- Growing demand from the industries

Business opportunities

- Waste management is an important issue in both politics and public
- The industries are the most important drivers of demand
- There is a need for green energy and a high demand for biomass. There is also a need for new incinerators and composting plants
- The market not yet mature and therefore new actors are still entering the market

Challenges

- The sector is dominated by some large international companies, such as SITA, Veolia and Van Gansewinkel, Shanks and Indavor

Conclusion

- Strong international companies on the market, but Swedish companies could benefit from the growing demand for waste management within the industry
- Competitive market, but possibilities to gain market shares, since the market is not completely mature
- Potential within biogas, green energy, residual waste, and high calorific

BRAZIL

- Significant investment needs to be done in the coming 5 years

Country facts		Waste management usage (if available):	
Population:	189 m	in industry	n/a
GDP/capita:	\$ 4 055	in municipalities	n/a
Average GDP growth over 5 years:	3 %		
Swedish export:	\$ 0,9 bn		
Swedish export, avg. growth 5 years:	7 %		

Waste management facts

- Significant investment needs to be done by the private and public sector in the coming 5 years
- A new legislation is expected to regularize the sector which will increase the opportunities
 - With the new law, a Federal Sanitation Policy is to be established. In order to receive federal funding, states and municipalities are pressured to follow this policy
- North and Northeast regions need heavy investments to bring better sanitation conditions to their population
- In Brazil almost 50 % of residences are without waste treatment and 35 % of the cities do not have “any” kind of selective collection service (approx. 2000 cities)
- Over 20 % of the garbage is thrown in open-air areas. Only 39 % of the Brazilian cities have proper Municipal Solid Waste final disposal and treatment
- Decisions are made in the public sector, on a regional or municipal level



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BRAZIL

-Waste management investments are increasing due to current situation

Business opportunities

- There is a strong increase in demand for solutions and products with high technology, mostly driven by the municipals (~ 2000 cities with improper conditions) and the civil construction sector
- Presently there are business opportunities for equipment used in the different recycling segments, preparation and transformation collection, decontamination and garbage transportation

Challenges

- Competition from low cost imports/domestic production
- Difficult to reach through to public administrations who are decision makers
- High import duty – average of 12 % - can limit the market for imported products. Furthermore it is expensive for Brazilian distributors or final customers to import - capital is expensive (11 % basic interest rate)
- Bureaucracy makes running business in Brazil complex

Conclusion

- Lack of defined investment plan on a national level
- The waste management sector has never been so favorable for companies considering investments, acquisitions or pursuing equipment sales and service opportunities. State and municipality projects are expected to increase
- A large need within the waste management sector is creating opportunities both within municipalities and industries
- Increasing demand for technologies and equipment to deal with treatment, recycling, collection and garbage transportation

CANADA

- Current ways of handling waste have to be changed

Country facts		Waste management usage (if available):	
Population:	33 m	Total:	>30 million tons/ year
GDP/capita:	\$ 25 562		
Average GDP growth over 5 years:	3 %		
Swedish export:	\$ 1,5 bn		
Swedish export, avg. growth 5 years:	13 %		



Ottawa

Waste management facts

- Over 30 million tons of waste is generated in Canada each year
- In Ontario, the richest and most populated province of Canada, the average waste generated per person is 1100 kg per year. This is the second largest amount per person and year in the world.
- The economics of waste management in Canada is changing: higher energy prices and a shortage of landfills mean that there is a need for new waste management solutions
- Toronto, Canada's most populated city, currently exports all of its solid waste to the US state of Michigan. The city has now committed itself to eliminating the waste crossing the border by 2010. New ways of managing waste will therefore need to be identified and implemented.
- The construction sector is booming and nearly 230,000 houses were built in 2007
- There is a growing interest for thermal treatment of waste, which is an area in which Swedish companies can build on considerable experience and expertise

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CANADA

- Urgent need for new waste management systems

Business opportunities

- Canada's richest and most populated provinces (Ontario and Quebec) now need to find new ways of handling the huge quantities of waste that they generate
- Investments in non-residential buildings increased by 12% in 2006, and reached €23 billion
- Thermal treatment facilities are currently being planned in a number of regions and municipalities
- Municipalities typically require new such facilities to reach European rather than North American emission standards

Challenges

- In some parts of Canada, public opinion is sceptical about waste management technologies that involve incineration
- Vast areas of available land in the prairie provinces mean that new landfill sites are still a viable alternative

Conclusion

- The amount of waste generated in Canada is among the highest in the world
- The systems that are currently in place to manage waste are facing constraints in the form of a shortage of new landfill sites and higher energy prices
- Many municipalities in the provinces of Quebec and Ontario are currently looking to update their facilities for handling waste and are considering thermal treatment facilities
- The time is right to introduce new innovative ways of managing waste in Canada

CHILE

- Increasing government awareness generates opportunities

Country facts		Waste management usage (if available):	
Population:	16 m	in industry	n/a
GDP/capita:	\$ 5 846	in municipalities	n/a
Average GDP growth over 5 years:	4 %		
Swedish export:	\$ 0,3 bn		
Swedish export, avg. growth 5 years:	13 %		

Waste management facts
<ul style="list-style-type: none"> • Solid waste generation is concentrated in Santiago Area, generating approximately seven million tons of waste per year, 50% of which is residential waste. • In all the country, about a 60% of solid waste is correctly disposed in controlled landfills, of which 95% are located in the Metropolitan Region. • Citizens still have low consciousness of the impact their waste generation has on the environment and they often have the “not in my backyard” attitude • The government is however increasingly aware of the issues, giving a high importance to developments in solid waste management. This is reflected in the elaboration of a plan (in 2005) with local and international funding, and executed by SUBDERE (Under secretariat for Regional Development) • The main objective is to achieve sustainable SWM, including: 90% of total municipal solid waste finally disposed in controlled sanitary landfills and an increase in waste valorization by 2012.



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CHILE

- Main opportunities arise in the municipal segment

Business opportunities

- The Government of Chile is carrying out a 150 MUSD program (administrated by SUBDERE) to achieve sustainable municipal waste management by 2012
- 53 MUSD in projects for municipal SWM and 15 MUSD for industrial SWM are pending for approval from SEIA (System for Environmental Impact Evaluation).
- Chile seeks to incorporate state-of-the-art technology
- Project funding available through CL-SE Partnership Fund

Challenges

- High market concentration and competition, particularly in Santiago Metropolitan Region. Three major companies Hidronor, Bravo Energy and KMD dominate the local solid waste management market.
- Possible price considerations and need for co-financing.
- Large investments in waste management facilities in the metropolitan area have just taken place (Santa Marta landfill, Quilicura transfer station), as well as in facilities for industrial waste handling.

Conclusion

- Current public and private investments generate business opportunities for Swedish companies on the Chilean solid waste management market.
- Opportunities arise mainly in the municipal segment outside Santiago Metropolitan Region, but there is potential in the rest of the segments and areas.
- In the municipal segment, there is demand both for consultancy services and new technologies.
- SUBDERE provides some subsidies to municipalities for projects, and Swedish companies can also benefit from project funding available through CL-SE Partnership Fund

CHINA

- The largest solid municipal waste generator in the world

Country facts		Waste management usage (if available):	
Population:	1 312 m	in industry	1.5 billion tons/year (+13.1%)
GDP/capita:	\$ 1 595	in municipalities	190 million tons/year (+8-10%)
Average GDP growth over 5 years:	10 %		
Swedish export:	\$ 2,8 bn		
Swedish export, avg. growth 5 years:	48 %		



Waste management facts

- China generated around 190 million tons of solid municipal waste (SMW) in 2007 (155 million tons in 2005) and the annual growth rate is estimated to be 8-10%. MSW estimated to reach 480 million tons by 2030. This is in large been driven by increasing living standard for the Chinese people.
- The industry in China generated 1.5 billion tons of industrial waste in 2006, which was an increase of 13.1% over the previous year. Hazardous waste reached 9.5 million tons in 2004.
- China has in accordance with the 11th Five-year Plan (2006-2011) allocated at budget of EUR 10.2 billion (RMB 111.5 billion) for building facilities for solid waste management.
- Waste management is not as prioritized as the water area – 47% of all new environmental projects during the last five years have been in water treatment, while only 11% in solid waste.
- Public awareness is growing, and the central government is also very aware of the environmental impact. However, the problem lies in municipalities, where environmental impact or sustainability is not considered. More than 80% of waste is treated in unsanitary landfills.

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CHINA

- Swedish companies can profit from increasing waste generation

Business opportunities

- Segments with opportunities for Swedish companies: Municipalities as well as chemical, metallurgy, mining, iron & steel industries.
- Demand for: Modern refuse incinerators; “closed system” landfills; Sorting and recycling technology; Waste-to-energy solutions.
- China is estimated to account for 50% of the world’s construction until 2015 which will bring many business opportunities in the waste management field.
- Opportunities will likely be found in Tier 2 cities.

Challenges

- Low willingness to pay for environmental technology products or services.
- Public awareness of waste management technology is lower than in more developed countries.
- Competition from lower technology (which sometimes is perceived as equal) and low-cost domestic solutions.
- Several foreign competitors are active in the market and have been present for quite some time.
- Local adaption is required, and the characteristics of the waste is vastly different in different regions over China.

Conclusion

- Total investment to the waste management technology sector until 2010 is about EUR 11.5 billion. This is a large figure, although waste management is not as prioritized as water and air pollution treatment.
- Swedish companies can benefit from China’s growing waste generation as well as the increasing public awareness.
- Projects run on an commercial basis are increasingly popular. However, it is hard to get adequate payback and risks include possible changes of rules or “open” interpretation from governments as the legislation is not clear.
- There is now a strong focus on improving recycling rates, which can benefit companies in this field.

THE CZECH REPUBLIC

- Municipal waste treatment has to be improved

Country facts		Waste management usage (if available):	
Population:	10 m	in industry	28 million tons/year
GDP/capita:	\$ 7 040	in municipalities	4 million tons/year
Average GDP growth over 5 years:	4 %		
Swedish export:	\$ 0,9 bn		
Swedish export, avg. growth 5 years:	16 %		

Waste management facts
<ul style="list-style-type: none"> • Land filling is still a widely used way of waste treatment. Total land filling is decreasing but volume of land filled municipal waste has increased by 10% in the last 4 years. • Municipal waste treatment has to be improved (focus on biodegradable waste treatment and recycling) • Waste recycling is getting popular. Nowadays, 77% of waste is utilized (including packaging waste), but municipal waste recycling has to be improved. • Companies focus on selling their waste as a secondary raw material. • Hazardous waste treatment is largely outsourced to specialized companies. • Sludge management needs to be improved in the Czech Republic • Many of car scrap yards do not fulfill environmental standards. • Due to EU legislation it is likely that the number of collected electrical appliances will rise • Incineration of municipal waste is not supported by the government – experts want to change this



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THE CZECH REPUBLIC

- Waste management is considered a good business

Business opportunities

Large demand in the following sectors:

- Biodegradable waste treatment where the main focus is:
 - Composting stations
 - Biogas stations and all related technologies (combined heat & power units, hygienization units etc.)
- Waste sorting technologies
- Technologies for utilization of sorted waste
- Sludge management € 780mil. allocated on waste management from EU funds

Challenges

- Uncertain situation regarding incineration development
- Waste management is considered a “good business” in the Czech Republic, therefore competition may be relatively high

Conclusion

- Swedish companies can benefit from the growing market potential in biodegradable waste treatment and increasing municipal waste recycling
- Waste management is considered a good business in the Czech Republic
- Most interesting sector is likely to be the private sector, which makes market entry easier than in case of public tenders
- There are ongoing discussions about municipal waste incineration potential and its suitability for the Czech Republic.

DENMARK

- Waste management is a prioritized area

Country facts

Population:	5 m
GDP/capita:	\$ 32 548
Average GDP growth over 5 years:	2 %
Swedish export:	\$ 10,6 bn
Swedish export, avg. growth 5 years:	18 %

Waste management usage (if available):

in industry	12 million tons (2006)
in municipalities	3,3 million tons (2006)

Waste management facts

- The Danish waste management model comprises waste from the industry as well as households
- Great political awareness about environmental issues in general
- More responsibility is put on the companies
- The government has developed a national plan to improve waste management
 - The current plan runs between 2005 and 2008, a new plan will be developed for 2009-2012
- The main body is Miljøministeriet
 - Every 4 years a national waste management plan should be developed by the government
 - Municipalities have the responsibility to develop waste management plans every 4 years
- Decreasing investments in environmental facilities (incl. waste management facilities), -47,6 % from 2008 to 2009
- Waste management is financed through taxes and fees
 - EU-funding is available (LIFE+)
- Waste dumping and waste burning is dominated by municipal companies
 - A majority of the waste recycling companies is privately owned
- A consolidation is expected where foreign companies buy Danish companies



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DENMARK

- High level of domestic know-how

Business opportunities

- New technical solutions are welcomed
- High willingness to pay for environmental issues
- Fairly high public awareness about waste management technology
- The responsibility for recycling of industry waste will be centralized – new law expected at the turn of the year
- Denmark is hosting the Cop15 in 2009 (UN: s Climate Change Conference)
 - Great focus on environmental issues and technical solutions

Challenges

- High level of domestic know-how
- Expected consolidation within the industry
 - Increased competition for domestic industry
 - Until now, the domestic industry has mainly focused on Denmark
- Decreasing investments in environmental facilities (incl. waste management facilities)

Conclusion

- Waste management is a prioritized area by the government
 - New initiatives are developed every 4 years in a national waste management plan
 - There is a great understanding for waste management among decision makers
- Denmark is well developed within the area of waste management
 - New technical solutions are welcomed

ESTONIA

- High public awareness of waste issues

Country facts		Waste management usage (if available):	
Population:	1 m	in industry	n/a
GDP/capita:	\$ 6 945	in municipalities	n/a
Average GDP growth over 5 years:	9 %		
Swedish export:	\$ 1,2 bn		
Swedish export, avg. growth 5 years:	22 %		



Waste management facts
<ul style="list-style-type: none"> • The waste management sector in Estonia is privatized with exception from three public institutions • Estonia has fulfilled most of the EU standards except the one which concerns storage of organic waste. Deadline is set to 16th of July 2009 • The largest and most active companies on the market are: Ragn-Sells, Cleanaway, Adelan, EcoPro and Veolia Environment . Ragn-Sells and Veolia have approximately 70% of the market together • The international companies present on the Estonian market are mainly from Sweden, Finland, Denmark, Germany and France. Most companies are members of the EWMA (Estonian Waste Management Association) • The awareness on a public level is quite high because of media and public debates. However, the political debate and awareness is not as high • The public decision-making bodies are: Environmental Investment Centre and Ministry of Environment

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ESTONIA

- Small market with tough competition

Business opportunities

- Technical solutions for treatment of organic waste: (Household)
- Demand for: new technologies for managing and recycling biological waste, incineration
- Due to higher environmental demands, Swedish waste management companies in Estonia like Ragn-Sells, are replacing and/or upgrading their vehicle fleets. There are potential for Swedish sub suppliers within the automotive industry
- Technical solutions for ground purification

Challenges

- A small market with many already well established international companies
- Hard competition
- No public investment budget
- Poor control and follow up on how rules and regulations are observed and followed
- The largest challenge is the risk of a nationalization of the waste management sector (which today is private) if the municipalities get the responsibility for providing waste management services

Conclusion

- There is no public investment budget for waste management in Estonia since the sector is more or less totally privatized. However, private companies can get financial means through EU funding entities
- Due to the small market size and hard competition between already well established international companies (among these Swedish as well) it's difficult to enter as a new player, only way is through acquisitions of already existing companies
- However, there is business potential within supplying new technology for recycling of biological waste, ground purification and treatment of organic waste. Moreover, there could be potential within vehicle fleet replacements and higher environmental requirements for the means of transport
- The biggest threat today, according to Ragn-Sells, is a nationalization of the waste management sector

FINLAND

- Shift from dumping to utilization and combustion of waste

Country facts

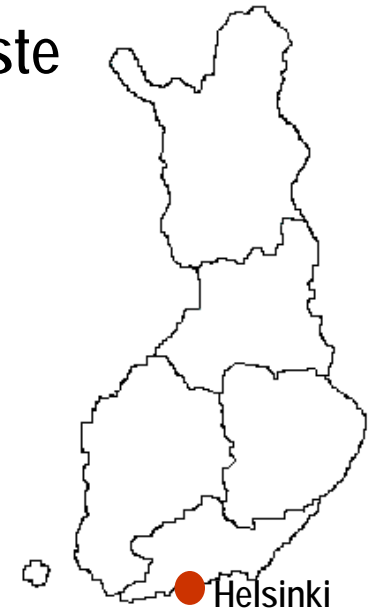
Population:	5 m
GDP/capita:	\$ 27 081
Average GDP growth over 5 years:	3 %
Swedish export:	\$ 9,3 bn
Swedish export, avg. growth 5 years:	17 %

Waste [management] usage (if available):

in industry	16 million tons/year (2006)
in municipalities	2,6 million tons/year (2006)

Waste management facts

- The general knowledge and awareness regarding waste management issues is relatively high in Finland. The problem is how to implement this in practice and which steps to take in everyday life in order to improve waste management.
- Two of the most challenging action points on a national level are to a) decrease the amount of biologically decomposable waste that leads to methane formation at the dumping stations; and b) increase the percentage of reclaimable materials from mixed waste.
- The "Towards a Recycling Community" plan is a step in the right direction. The goal is that 50% of all commercial waste should be recycled and re-used, 30% should be recycled as energy, and only 20% of the waste should be taken to dumps by 2016. Today less than 10% is recycled to energy while approximately 50% of all commercial waste is dumped. One of the main features of this plan is the construction of 5-8 new combustion plants, at a cost of 100-200 MEUR each.
- The municipalities in Finland have sole decision-making power and plan their own waste management system accordingly, sometimes through regional co-operation and municipally governed albeit company-like organizations.
- The producer's responsibility and the "polluter pays"-system plays an important role in Finland's waste policy.



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FINLAND

- Growing demand for Swedish combustion technology and expertise

Business opportunities

- Segments with opportunities for Swedish companies: Waste and sludge combustion and gasification technologies, biological treatment of waste and sludge, waste sorting and recycled fuel plants; Municipalities, and certain heavy industries (e.g. chemical, food)
- Demand for: Equipment and know-how relating to construction and operation of combustion plants; Technologies relating to different waste fractions, such as electric and electronic scrap and waste plastic, tires, paper, board, wood, construction and demolition waste

Challenges

- Competition from companies that are already present
- Lack of free competition in half of all municipalities
- Major investments in and modernization of industrial waste management already completed
- Lack of qualified labor

Conclusion

- There are emerging opportunities in new waste management areas such as combustion-, composting- and biogas-facilities/plants as there is a lot of potential but very little local know-how
- Sweden could be a substantial partner in terms of developing combustion plant infrastructure, but also on a grass-roots level in terms of providing solutions that enable households to become more environmentally active
- National waste management goals and targets for 2016 should give rise to a new level of demand for innovative environmental technologies and services

FRANCE

- There is a high awareness of waste management issues

Country facts		Waste management usage (if available):	
Population:	61 m	in industry	425 million tons/ year
GDP/capita:	\$ 23 899	in municipalities	46,5 million tons/ year
Average GDP growth over 5 years:	2 %		
Swedish export:	\$ 7,3 bn		
Swedish export, avg. growth 5 years:	14 %		



Waste management facts

- The general awareness of waste management from the public, government and the EU is high and therefore is pushing the demand for waste management solutions
- The government has through the project Grenelle de l'Environnement taken steps to push the environmental issues and to reduce waste
- The French Agency for Environment and Energy (ADEME), the French Institute for the Environment (IFEN) and local municipalities are responsible for waste management in France
- In 2004, 19% of France's total waste was recycled. The goal for 2015 is to have between 35% to 60% of all the domestic and alike waste recycled
- The three largest companies (Veolia/Onyx, SITA and CNIM) accounts for 50% of the market
- France have not yet reached the EU standards for waste management
- The coordination of waste management activities on a national level is poor

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FRANCE

- Business opportunities within recycling

Business opportunities

- Recycling is considered as one of the most important segments within waste management in France
- Exporting technical solution to the big French actors is an interesting possibility for Swedish companies
- Several new incinerators are planned to be built, leading to possibilities for Swedish companies with knowledge within incinerating
- Possibilities for Swedish companies to work directly with municipalities that make their own purchasing decisions

Challenges

- Fierce competition on the market from the big multinational groups such as Veolia and Suez
- There is a considerable gap between the state that regulates the market and the reality of the different municipalities that makes the purchasing decisions.
- The result of this is a dispersed market and problems with fulfillment of laws and regulations
- Mr. François Mauvais (ASTEE*): “The government has lost its ruling control over the waste management industry in France”

Conclusion

- The high general awareness of waste management issues and the substantial investments that are being made indicates that the market will grow and will be in need of new technical solutions in upcoming years
- The high goals that are set for the recycling segment indicate possibilities for Swedish companies within recycling
- Due to the high consolidation of the market, Swedish companies that supplying technical solutions to existing actors is interesting for the French market rather companies that offer waste management services
- The lack of national cooperation within waste management activities in France could slow down the evolution of the market

*ASTEE - Association Scientifique et Technique pour l'Eau et l'Environnement

GERMANY

- A large and leading market within waste management

Country facts		Waste management usage (if available):	
Population:	83 m	in industry	31 million tons/year
GDP/capita 2006:	\$ 24 592	in municipalities	29 million tons/year
Average GDP growth over 5 years:	1 %		
Swedish export 2006:	\$ 14,6 bn		
Swedish export, avg. growth 5 years:	13 %		



Waste management facts
<ul style="list-style-type: none"> • There is a high public as well as political awareness regarding environmental issues and Germany has one of the highest recycling quotas in the world with following statistics: municipal waste 57%, industrial waste 58%. In some areas even higher quotas are reached: construction waste 86%, packaging waste 80%, batteries 82% , paper 80% • Today about 250.000 people are involved in the waste management industry, with a yearly turnover of more than 50 billion Euro • Waste-to-energy is seen as an important energy source with large potential in Germany • The environmental work has resulted in a national plan called "Ziel 2020" (=goal 2020) with the goal set to reach total recycling of all municipal waste through separation and treatment with energy recovery by the year 2020 • A strict and early regulation has fostered a large market for waste management technology

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GERMANY

- A competitive market offering opportunities for innovative niche players

Business opportunities

- Biggest opportunities in the industry sector
- Waste processing with low amounts of waste recovery (e.g. surface treatment, smelting processes)
- Bio-Technology. Methods/processes for fermentation of organic waste with generated biogas used for electricity and heat production
- Technology for energy efficient waste recovery of raw materials (e.g. using optic-, electromagnetic-, ballistic- or mechanical separation methods)
- IR-techniques and fast electronic data processing

Challenges

- Intense competition by big full service providers
- German companies with large financial resources and know-how
- Pressed prices in some market segments
- Most installations have already been modernized
- Germany is one of the leading exporters of waste management technology
- Already very high shares of recycling

Conclusion

- Intense competition on the German market with a few market leading full service company groups with large financial resources and know-how
- The best opportunities for Swedish companies lie in specialized fields where they can offer innovative solutions and competitive niche products
- Also option as a sub supplier of already existing companies on the German market
- Potential for electronic waste recovery as well as waste to energy, due to high prices for raw materials and electricity.

GREECE

- Still issues with illegal dumping

Country facts		Waste management usage (if available):	
Population:	11,1 m	in industry	n/a
GDP/capita:	\$ 300	in municipalities	n/a
average GDP growth over 5 years:	n/a		
Swedish export:	\$ 2,2 bn		
Swedish export, avg growth 5 years:	n/a		

Waste management facts
<ul style="list-style-type: none"> • Moderate awareness on environmental issues • There are national and regional plans, funds from Cohesion fund are expected. The main objectives are to set up waste treatment facilities to treat biodegradable wastes • State is trying to shut down illegal and uncontrolled dumping • The budget for improvement is 1.2 billion Euro and is expected to be absorbed by 2013 • The Ministry of Finance and the Ministry for the Environment are the two ministries responsible for waste management issues



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GREECE

- Good opportunities due to large investment plan

Business opportunities

- Segments with opportunities for Swedish companies:
Municipalities and counties
- Demand for:
 - Rubbish incineration
 - Recycling
 - Bio-energy from waste
- Clarified a generous budget for investments

Challenges

- Other countries with leading technology are present
- Bureaucracy
- Local presence is a must
- Difficult to reach through to decision makers in the public administration

Conclusion

- Total investment in the waste management technology sector until 2013 is about 1,2 Billion EUR. Both EU funding entities, the Government and the different municipalities consider waste management to be a high-priority area
- Swedish companies could benefit from the big investments and that the market is at an early stage
- To be able to do business in Greece local presence will be needed

INDIA

- Huge demand with limited supply; well supported by government

Country facts		Waste management usage (if available):	
Population:	1 110 m	Total:	42.0 million tons/year
GDP/capita:	\$ 634		
Average GDP growth over 5 years:	7 %		
Swedish export:	\$ 0,5 bn		
Swedish export, avg. growth 5 years:	17 %		



Waste management facts

- Waste generation in India is estimated to be 115 000 MT of waste per day or 42 million MT annually
- TERI (Tata Energy Research Institute) estimated that waste generation will exceed 260 million MT per year by 2047, which is more than six times of present level
- 50% of the waste generated are compostable matter
- Paper waste has increased by 224%, plastic and rubber wastes have increased by 1537% since last decade
- 35 large cities (with plus 1 million population) contribute 35% of total waste generation
- These 35 large cities have been set up with 100 MT to 700 MT capacities of compost plants, functioning much below their installed capacity
- It is estimated that Indian Government will invest over EUR 620 million on Solid Waste Management until 2010

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INDIA

- Sweden should act proactively to secure its future in India

Business opportunities

- Customer segments for Swedish companies: Municipalities will continue to be the major users; however with strong law enforcements, experts foresee a huge potential in the industry in coming years
- Business segments for Swedish companies:
 - Municipal solid waste: Highly growing demand
 - E-waste management: Recycling and collection
 - Mercury waste management: Upcoming segment
 - Hazardous waste management: Matured market
- India spent EUR 33 billion in construction industry in 2007 which is estimated to grow 9.2% yearly

Overall Challenges

- International competition: Leading ones are Germany, US, UK, Norway, Japan, Netherlands and Switzerland
 - Lack of enforcement of laws and political bureaucracy
 - Low public awareness of waste management technology
 - To enhance the funding structure even better
- Challenges for Swedish companies from interviews:
- To remove myth from Swedish companies about 'Complex India' picture
 - To familiarise Swedish companies with the local growing demand and market segments
 - They need a helping hand!

Conclusion

- Total government investment to the waste management sector until 2010 is over 620 MEUR (excludes private investment)
- All global funding agencies like World Bank, ADB and EU have large cooperations with India
- “The globe is watching us closely” – as heard often from our interviews, relating to the fact that all major countries recently have had their delegation visits to India and many have signed MoU’s and started cooperating with India
- Few of the Swedish companies like Sweco AB, Rehact AB, Sweden Recycling AB and Swedish Exergy Consulting AB have already decided to venture into Indian market; few of them would also be funded by SIDA
- Swedish companies could benefit from Indian market by providing solutions for solid waste, e-waste, mercury waste and hazardous waste managements; also Swedish municipal bodies should tie-up with Indian local bodies to lobby other Swedish companies

IRELAND

- Clear need to increase infrastructure for waste management

Country facts		Waste management usage (if available):	
Population:	4,2	in industry	n/a
GDP/capita:	n/a	in municipalities	n/a
average GDP growth over 5 years:	n/a		
Swedish export:	\$ 2,1 bn		
Swedish export, avg growth 5 years:	n/a		

Waste management facts

- Waste management in Ireland is in a transition phase moving rapidly from an unsophisticated and one dimensional approach heavily dependant on landfill, to a more modern waste management structure.
- Overall recycling rate has increased from 9% in 1998 to 36.1% in 2006. Packaging waste recycling has increased from 15% in 1998 to 57.3% in 2006.
- There is a clear need for increase infrastructure for waste management and recycling both for municipalities and industries. Considerable quantities of waste collected for recycling in Ireland is exported due to infrastructure deficits. Ireland currently exports 75% of recyclable municipal waste and 47% hazardous.
- Ireland's dependence on landfill remains high relative to other European countries. The infrastructure deficits are likely to affect Ireland's ability to meet the targets set down in the EU Landfill Directive.
- The lack of national treatment facilities could potentially restrict economic development if the necessary range of treatment capacities in not accessible.



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IRELAND

- Increasing the recycling capacity is a highly prioritized area

Business opportunities

- The Irish Environmental Protection Agency has identified the following four areas where Ireland specifically experiences a current infrastructure gap and where Swedish companies could offer interesting modern technique and solutions: 1) Facilities for biodegradable waste; 2) Contaminated soil; 3) Construction and demolition waste and 4) Hazardous waste.
- Thermal treatment capacity to recover energy from municipal and industrial waste and reprocessing capacity for recovered materials (e.g. paper, glass, plastic, metal recycled materials) are also needed.

Challenges

- Lack of standards
- Little coordination of regional waste plans (Ireland is not fully exploiting the economies of scale that can exist in the delivery of waste infrastructure)
- Lack of education and poor public awareness
- For certain areas - Lack of research/general technical knowledge/know how

Conclusion

- Achieving greater indigenous recycling capacity in Ireland is becoming a highly prioritized areas for the Irish government.
- Important investment programmes have been launched: The Market Development Programme 2007-2011(€13.000.000) and the Waste Management Sub-programme(€753.000.000) included in the National Development Plan 2007-2013.
- Ireland is interested in Swedish technique and modern solutions for waste management and recycling. In 2006 Ireland did a benchmarking study on waste management and Sweden was one of the countries used as benchmark.
- In addition, in May 2008 the Swedish Trade Council and the Swedish Embassy in Dublin arrange a seminar on waste management and recycling in close cooperation with the Irish Environmental Protection Agency.

ITALY

- Large market with significant regional differences

Country facts		Waste management usage (if available):	
Population:	58,6 m	in industry	n/a
GDP/capita:	\$ 18 367	in municipalities	31 milion tons/year
average GDP growth over 5 years:	n/a		
Swedish export:	\$ 14,3 bn		
Swedish export, avg growth 5 years:	n/a		

Waste management facts

- In 2005 Italy produced 31 678 000 tons of urban waste, which in 2006 cost € 6,5 billion (€ 112,5/capita) to manage
 - 50 % was land filled, 10 % was composted, 10 % was incinerated and 30% was recycled
 - 45% of waste was produced in northern Italy, 23% central, 22% south, 11% in the islands
- In 2005 Italy's municipalities invested 1 bn euro in waste management. 770 million euro was invested through municipality-owned companies and 266 million euro was invested by the municipalities directly.
- Waste management technology and capacity is more advanced in the northern parts of the country with higher incineration and recycling rates
- The majority of waste management companies are private companies owned by one or more municipalities. Northern Italy is experiencing consolidation between in waste management companies
- Wholly private companies are more active in the sector of industrial waste management.



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ITALY

- Waste to energy and recycling solutions wanted

Business opportunities

- Waste to energy: Italy needs to increase its capacity to handle waste and need to decrease energy dependence on fossil fuels. Waste to energy solutions are specifically asked for by industry associations and municipalities are investing in new incinerators
- WEEE: the EU directive has just been implemented into Italian law and electronic waste is increasing
- Other recycling processes and technology: only at an early stage of development in many parts of the country

Challenges

- The Italian public sector can be a slow, complex and bureaucratic customer
- The 'not in my back yard' is making it difficult to increase landfill or incinerator capacity in some regions (notably Naples)
- Italy is an EU country and international competitors are already present to some extent

Conclusion

- Italy is a large market with growth potential as Italy needs to increase its capacity to handle waste and do so in efficient ways
- Industry and politicians are actively looking for new solutions in waste management
- National competition is low, so Swedish products that are internationally viable have strong prospects in Italy
- Northern Italy has come a lot further than the southern parts of the country in managing waste, recycling and energy production. Innovative solutions may be easier to introduce in the north of the country first
- For urban waste the end customer is the public sector which may make decision making slow and complicated. However the immediate customers of Swedish companies may be the increasingly privatized municipal service companies

LATVIA

- Low awareness of recycling and waste management in general

Country facts		Waste management usage (if available):	
Population:	2 m	in industry	n/a
GDP/capita:	\$ 5 683	in municipalities	n/a
average GDP growth over 5 years:	8 %		
Swedish export:	\$ 0,6 bn		
Swedish export, avg. growth 5 years:	25 %		

Waste management facts
<ul style="list-style-type: none"> • Small amount of recycling due to lack of information. Various awareness within industries • Latvia has a lack of technology assessments mainly in solid and hazard waste management • Low willingness to pay for environmental issues both among public and industries. Low public awareness of waste management technologies, lack of information. Also low awareness of recycling and waste management in general. Big challenge to change habits/opinions of inhabitants and companies. • There is a large number of outdated dumpsites that needs to be updated with today's technology with good waste management systems. Also landfills not fulfilling the requirements of EU has to be closed down within a few years.



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LATVIA

-Waste management companies may benefit from raised awareness

Business opportunities

- There is a lack of technology within the waste management
- Segments with opportunities for Swedish companies: New solid landfills, infrastructure and system for solid and hazard waste management and creation of system for recycling.
- Large EU and state funding for waste management
- The government is trying to make industries and inhabitants more aware of the environmental issues, this could benefit waste management companies

Challenges

- Low willingness to pay for environmental issues
- Low public awareness of waste management technology due to lack of information
- Big challenge is to change habits and opinions of inhabitants and companies

Conclusion

- The government is trying to make the public more aware of environmental issues, this could create a bigger market within recycling and reuse, if the government manage to reach the audience
- Large subsidiaries from the state and funding from EU may encourage companies and municipalities to invest in waste management
- New technology are needed in Latvia to update insufficient equipment

THE NETHERLANDS

- Roughly 80% of the waste is recycled, the rest is incinerated or dumped

Country facts

Population:	16 m
GDP/capita:	\$ 25 333
Average GDP growth over 5 years:	3 %
Swedish export:	\$13,5 bn
Swedish export, avg growth 5 years:	16 %

Waste management usage (if available):

in industry	59.3 million tons/year
in municipalities	10.7 million tons/year

Waste management facts

- The NL generates over 60 million tons of waste per year, excluding dredging sludge and manure surpluses. Approx. 40% consist of construction and demolition waste, roughly 25% is industrial waste and barely 16% is household waste. The rest consist of smaller waste flows, e.g. waste water sludge
- Total average of municipal waste has since the year 2000 been fairly stable at 10,3 million tons and household waste constitutes approx. 90% of total municipal waste in the Netherlands.
- There is a target set for the municipalities by the national waste management plan, the LAB. In 2006 not urbanized municipalities collected 58% of the waste separately. Their average target is set on 60%. Extremely urbanized municipalities collected 22% of household waste separately. Their target is 43%.
- New investments within waste management is basically only directed to disposals and new incinerators which is supposed to add an extra management capacity of 900 000 tons of waste. The budget for this is € 600 M for 2008 and 2009.



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THE NETHERLANDS

- Opportunities exist in a very developed and competitive market

Business opportunities

- It is common for international players to acquire Dutch waste management companies and facilities, especially since borders for trading waste have opened within the EU. The result is stronger competition.
- There is a need for new techniques when it comes to handling plastic waste. Lots of investments in new facilities are planned for this purpose.
- Future need for increased capacity regarding managing waste from construction/building demolition

Challenges

- Despite high political and public awareness, the Dutch fail to separate when collecting waste.
- The opening of borders within the EU for trading with waste has put waste management under price competition from eastern European countries.
- Privatization of waste management creates uncertainties regarding economical and general responsibilities.

Conclusion

- The market for waste management is well covered in the Netherlands and the demand for new technologies is mostly prevalent in niche markets, e.g. plastics.
- Laws and regulations are comprehensive regarding waste management
- Public and political awareness regarding waste and environment is high
- Business potential exists for Swedish companies with: - commercial potential for private entrances, i.e. to buy up or into municipality owned companies, - good knowledge in the handling of plastic waste and separation of household waste – knowledge in handling construction/building demolition waste
- The Netherlands has little or no handling of dry batteries.

NORWAY

-Increased disposal income gives Norway a growing waste problem

Country facts		Waste management usage (if available):	
Population:	5 million	in industry	3.6 million tons/year
GDP/capita:	\$ 40 947	in municipalities	6 million tons/year
Average GDP growth over 5 years:	4 %		
Swedish export:	\$ 3,1 bn		
Swedish export, avg growth 5 years:	20 %		

Waste management facts

- 9.6 million tons of waste was produced in Norway 2006. Norwegian industry were accountable for 63 percent whereas the households were responsible for 37 percent.
- There has been an large increase in waste (30 percent totally) during the last ten years in Norway mostly due to increased income and consumption among households
- The overall aim for Norway is to reduce the level of waste and primarily the level of waste sent to landfills. Today, 70 percent of all waste is taken care of in one way or another, the goal is to increase the level with a additional five percent by 2010.
- 30 percent of all waste is processed through material recycling
- 10 percent processed in to energy
- Norway is constantly implementing new regulations towards waste , disposal and the polluters



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NORWAY

- New waste regulations creates export opportunities

Business opportunities

- Norway has great need for new waste technologies, specifically in the fields of waste sorting, combustion and new biogas plants.
- Technologies where waste is reproduced into energy are all very interesting segments which are expected to grow
- A new law which will be implemented in 2009 bans all kind of land filling of organic waste, by today, Norway does not have a solution for the increased waste handling.
- Business sectors within building and construction will need large investments within waste management due to the new upcoming law

Challenges

- Competition from domestic production, as they have specialized their production towards Norwegian standards and demands
- Decentralized decision process with numerous decision making parties which might imply ineffective sales efforts
- No national budget for new investments

Conclusion

- Norway has a problem with increasing waste
- Norway has a huge demand for technical solutions for waste handling. The short term solution of exporting waste export will not be a sustainable solution on long-term basis
- Swedish companies could benefit on the growing market potential due to the new upcoming law, that bans organic waste as landfill
- Swedish companies active within production of waste sorting technology, combustion and biogas have large potential to succeed on the Norwegian market

POLAND

- Insufficient legal regulations and a general lack of public awareness

Country facts		Waste management usage (if available):	
Population:	38 m	in industry	n/a
GDP/capita:	\$ 5 521	in municipalities	n/a
Average GDP growth over 5 years:	1 %		
Swedish export:	\$ 0,7 bn		
Swedish export, avg. growth 5 years:	14 %		



Waste management facts
<ul style="list-style-type: none"> • Market for waste management is growing rapidly • Insufficient legal regulations and a general lack of public awareness • National Waste Management Plan established in order to fulfill EU standards • Municipalities and many industries are revising and updating their waste treatment systems • Large shortage of cheap solutions for the Polish country side • Existing landfills in the larger cities have too little capacity • Main business opportunities lie in offering turn key solutions for end users • Most important decision makers on the market are technical and environmental consultants • Important for companies to also offer services and knowledge about EU funds applications

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POLAND

- Large EU funds accessible

Business opportunities

- Segments with opportunities for Swedish companies:
 - Industries (chemical, mining, energy, steel and paper)
- Demand for new technologies for waste utilization (waste burning) and waste segregation systems
- Large EU funds accessible
- Poles want help to spend their EU money
- Polish decision and regulatory bodies very positive about cooperation with Swedish companies

Challenges

- It's a bit late as other foreign companies have been very active in Poland for some time
- Small Swedish companies need to build consortia in order to enter Polish market
- Presence on the Polish market is required
- Competition from low cost imports/ domestic production
- Low public awareness of waste utilization

Conclusion

- Total investment to the waste management sector until 2015 is about 3,1 billion EUR. Waste management has been defined as a priority area number 2
- Swedish companies could benefit on the growing market potential by....
 - setting up production in Poland
 - working through distributors
 - acquiring consulting firms

ROMANIA

- Huge demand and lack of local knowledge

Country facts

Population:	22 m
GDP/capita:	\$ 2 443
Average GDP growth over 5 years:	6 %
Swedish export:	\$ 2,4 bn
Swedish export, avg. growth 5 years:	23 %

Waste management usage (if available):

in industry	311 million tons/year
in municipalities	8 million tons/year



Waste management facts

- Industry waste is 40 times higher than the municipality waste
- The biggest share of the investments are financed through the Environment Operational Program
- Private investments for industries are hard estimate but are driven by EU regulations
- Main challenges are the mentality change to make the selective waste collection happen and in the field of infrastructure for the rural areas

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ROMANIA

- Biggest opportunities within industry segment

Business opportunities

- The industry segment has biggest opportunities for Swedish companies
- Demand for: waste management technology, know-how, consulting services, project management
- Building sector expanding
- Huge industrial waste market
- Interesting municipalities market, at all levels, from the big towns to the rural areas

Challenges

- Competition already present
- Low public awareness of waste management issues
- It takes long to reach decision makers in the public administrations
- Selective urban waste collection
- Lack of infrastructure within the rural areas

Conclusion

- To comply with European standards it is estimated that 4 billion EUR needs to be invested
- Local presence is important
- There are plenty of waste management projects where Swedish companies could be involved, both for municipalities and for the private companies

SOUTH KOREA

- Clear goals to reduce the amount of waste generated

Country facts		Waste management usage (if available):	
Population:	48,4 m	in industry	41 million tons/year
GDP/capita:	n/a	in municipalities	18 million tons/year
average GDP growth over 5 years:	n/a		
Swedish export:	\$ 2,7 bn		
Swedish export, avg growth 5 years:	n/a		



Waste management facts
<ul style="list-style-type: none"> • Korea experiences high environmental pressures due to its highly industrial economy, population density and limited carrying capacity. As a result, Korea's waste generation per unit areas is one of the highest among OECD member countries. • To deal with increase in total waste generation, Korea has launched a series of measures including a volume-based waste fee system (unit pricing system) and a comprehensive national waste management plan (2002-2011). • Investments of about 183 Million Euros per year have been made since 2004 to 2007. From 2008 until 2011, plans are to invest a total of 840 million Euros into the area of waste management. • It has set very clear goals for waste management strategies to reduce the total amount of waste generated by 12%, increase recycling by 53% and reduce incineration and landfill disposal by 22% in 2011.

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SOUTH KOREA

- Demand for technology for recycling of industrial waste

Business opportunities

- Segments with opportunities for Swedish companies: Municipalities (Landfills, food waste treatment plants, incinerations facilities, etc.), industry (Construction, electronics, automotive)
- Demand for: waste management technology, especially technology for recycling of industrial waste and efficiently collecting and managing energy from waste resources (Incineration with energy recovery, landfill gas extraction)
- Building sector expanding, portion of industrial waste increasing

Challenges

- Competition from domestic players with relationships and references in the Korean market (especially the municipal market)
- Low public awareness of Swedish waste management technology
- Difficult to reach through to public administrations who are decision makers
- Difficult to partner with the right local player - most players in this segment are small to medium sized companies

Conclusion

- Total government investment into the waste management sector from 2007 until 2011 is about 1 Billion EUR. The Korean government is fully aware of the seriousness of the situation Korea is facing in terms of waste management and finds this area one of the top priorities in its environmental policies today.
- It has set very clear goals for waste management strategies to minimize waste generation, strengthen energy recovery from waste and implement strict regulations and infrastructure to enhance recycling.
- Swedish companies could benefit from the Korean government's initiative to implement such waste management policies and strategies which would mean growing demand and market opportunities

SPAIN

- Main market drivers are the EU directives

Country facts		Waste management usage (if available):	
Population:	44 m	in industry	60.4 million tons/year
GDP/capita:	\$ 16 177	in municipalities	30.8 million tons/year
Average GDP growth over 5 years:	3 %		
Swedish export:	\$ 4,6 bn		
Swedish export, avg. growth 5 years:	19 %		



Waste management facts

- According to information from the EU the total annual production of municipal and industrial solid waste in Spain is approximately 90 Mio. tons/y and growing rapidly
- The main drivers of demand are the EU directives to reduce the use of landfills which will lead to a drastic increase in demand for modern waste management technology
- There are incentives from the government to increase recycling, collection systems
- Spain's autonomous communities will likely adopt incineration technologies that employ waste-to-energy technologies.
- Composting is an interesting alternative in the south and east of Spain due to intensive agriculture and poor soils)
- Biogas caption is largely unexplored in Spain, only implemented at four landfills.

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SPAIN

- Interest in waste-to-energy technologies

Business opportunities

- Since other countries in the EU are widely adopting incineration of solid waste as the main mechanism to dispose of solid waste, Spain's autonomous regions will most likely also employ waste-to-energy technologies
- In August 2005 the Spanish Parliament decided to increase the part of electricity production from renewable energies from 19 % to 30,3 % which gives further incentives for realization of anaerobic digestion and incineration plants in Spain.
- Strong interest in Spain for composting technologies.

Challenges

- Low general awareness of available technological solutions for waste management
- The down turn of the economy and particularly the building sector
- Solid waste management in Spain dominated by three operators that has 47% of the market
- Lack of infrastructure to support some of the technological solutions championed by Swedish companies e.g. lack of district heating

Conclusion

- A combination of rapidly increasing energy prices, a large market and firm EU directives to reduce the amount of biodegradable biomass going to landfills creates a great potential for companies that can provide the right technological solutions for the under developed Spanish market.
- Sweden has a strong position and know-how in this sector

SWITZERLAND

- A mature market with high waste management demands

Country facts

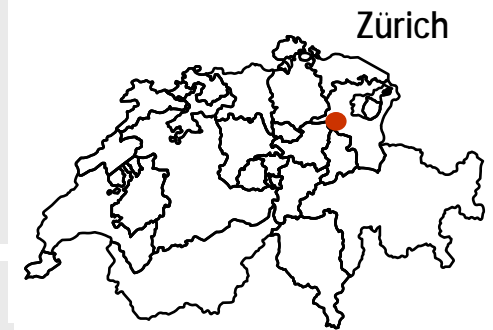
Population:	7,4 m
GDP/capita:	\$ 35 696
average GDP growth over 5 years:	n/a
Swedish export:	\$ 3,9 bn
Swedish export, avg growth 5 years:	n/a

Waste management usage (if available):

in industry	13.2 million tons/year
in municipalities	2.7 million tons/year

Waste management facts

- Public waste management is very decentralized in Switzerland with the cantons having a large amount of responsibility
- Waste management is financed partly with taxes but mostly with special fees
- Switzerland has high demands on recycling for which the producers and consumers are responsible
- Waste management development is driven by population and consumption growth, waste as a commodity and waste as an energy source.
- Large investments are made on restoration of abandoned landfills with hazardous waste



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SWITZERLAND

- Possibilities for unique high end solutions

Business opportunities

- Switzerland's high requirements within waste management could lead to business opportunities for Swedish companies with high end products
- High public awareness of environmental issues
- An important topic with large investments right now is restoration of old landfills with hazardous waste, which could also offer business opportunities
- Technologies for incineration and waste sorting are regarded as interesting for the future

Challenges

- No EU country
- Waste management infrastructure already in place more or less – creating a demand for incremental investments with top of the line solutions
- Swiss companies have much competence in the incineration area

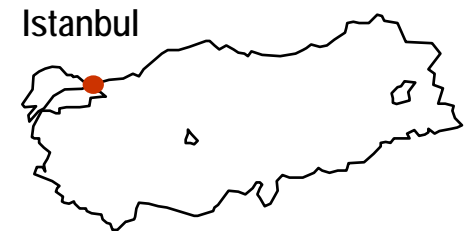
Conclusion

- Switzerland is a mature market with few obvious possibilities (being in contrast to e.g. new EU countries in CEE)
- Swedish companies offering unique high end solutions can profit on Switzerland's high requirements

TURKEY

- Will spend 9.6 Billion Euro on waste management until 2023

Country facts		Waste management usage (if available):	
Population:	73 m	in industry	n/a
GDP/capita:	\$ 3 582	in municipalities	n/a
Average GDP growth over 5 years:	5 %		
Swedish export:	\$ 1,3 bn		
Swedish export, avg. growth 5 years:	26 %		



Waste management facts

- Turkey has a long term plan called "EU Integrated Environmental Approximation Strategy" to meet EU standards between 2007 and 2023.
- The plan has an estimated budget of 58.6 Billion Euro for environmental issues and an estimated budget of 9.56 Billion Euro for solid waste management.
- Waste management Investments are to be financed as follows; Central administration 12%, Municipal resources 30%, Iller Bank 15%, External credit 4%, Funds (EU+Other grants) 39%.
- Turkey is an important importer of waste management machines and technologies. German companies dominate the market.

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TURKEY

- Integration to EU creates increased demand for waste management

Business opportunities

- Biggest opportunities within municipalities
- Due to Turkey's integration to EU, new regulations apply which creates an increased demand for waste management solutions.
- Turkey is an important importer of waste management technologies and consulting services.

Challenges

- German companies have a strong position on the Turkish waste management market
- Partnership with Turkish companies is needed to reach public administrations as well as to deal with complex bids.

Conclusion

- Total investment to the waste management technology sector until 2023 is about 9.56 Billion EUR.
- Swedish companies could benefit from the growing market potential by forming a partnership with a domestic company and approaching the financially sound companies or municipalities.
- European companies are already active in the country and there is an increasing demand for application of advanced technologies

UNITED KINGDOM

- Landfills still the most common way to handle the waste

Country facts		Waste management usage (if available):	
Population:	60 m	in industry	n/a
GDP/capita:	\$ 27 582	in municipalities	n/a
Average GDP growth over 5 years:	3 %		
Swedish export:	\$ 10,7 bn		
Swedish export, avg. growth 5 years:	10 %		



Waste management facts

- Value of the UK construction market was £46bn 2007
- UK waste and recycling market size was £8.1bn 2005
 - The market value is expected to grow to £20-30bn to 2020
- Landfill taxes and costs are the main driver for the UK waste management market
- Legislations and regulations differs between England, Wales, Scotland and Northern Ireland
- 70 % of England's household waste was sent to landfills 2006/2007
 - compared to 74 % 2005/2006
- 58 % of England's municipal waste is sent to landfills 2006/2007
 - Compared to 62 % 2005/2006
- Recovery (compost, recycling and energy recovery) target for household waste:
 - 40 % to 2010; 44 % to 2015; 50 % to 2020

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UNITED KINGDOM

- New solutions are needed to reach requirement from EU directives

Business opportunities

- Segments with opportunities for Swedish companies: municipalities and industry
- Both recycling and energy recovery are governmental prioritised areas
- Waste management tech demand is growing due to
 - Landfill shortage (Governmental issue)
 - New regulations (Municipals and Industry)
 - Landfill costs and taxes (Industry, households)
- Building sector expanding due to:
 - Housing shortage, OS 2012, old housing stock

Challenges

- Competition from large international players active on the UK market (Veolia, SITA etc)
- Even if the public awareness for waste issues is high, the public willingness to pay for waste management is low

Conclusion

- Total value of the waste management market is estimated to be £20-30bn 2020
- Both the industry and municipalities are expected to be important for deriving the waste management equipment market
- New techniques and solutions are needed in the UK to enable the country to reach the requirements of the EU directives and the goals set by the government
- Furthermore high demand for new construction combined with a shortage of landfills result in a great need for waste solutions

USA

- Still low public awareness about environmental issues

Country facts		Waste management usage (if available):	
Population:	299 m	in industry	n/a
GDP/capita:	\$ 38 165	in municipalities	n/a
Average GDP growth over 5 years:	2 %		
Swedish export:	\$ 13,7 bn		
Swedish export, avg growth 5 years:	10 %		



Waste management facts

- There is an increased public awareness about environmental issues, although Americans are still behind Sweden and many other European countries
- Solid waste generation has almost tripled since the 1960s, and continues to increase. The U.S. generates 60% more solid waste per person compared to Sweden
- The amount of waste being recycled or used for energy production is very low in the U.S. compared to Sweden. Landfilling is the most common waste management (54% of the waste is brought to landfills). 32% is recycled and 14% is incinerated
- The U.S. EPA is a federal government and sets standards and regulations for waste handling on a federal level. Each state need to follow these regulations, but can to a certain level set their own standards and regulations

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USA

- Highly competitive and regulated waste management industry

Business opportunities

- The recycling industry is expected to continue to increase, due to increased landfill tipping fees
- Innovative solutions on how to manage and extract energy from landfill waste
- Handling of hazardous waste, since it requires technologically complex products
- The use of waste to energy is expected to grow, although the production of new facilities will continue to be stagnant
- Specialized areas where the domestic competition is not as strong

Challenges

- Low political interest for environmental issues on a federal level
- Low public awareness of waste management technology
- Low willingness to pay for environmental issues
- Certain reluctance towards new technologies
- Tough competition from domestic companies
- Many regulations. Certifications, product adaptations etc. could be complicated and expensive

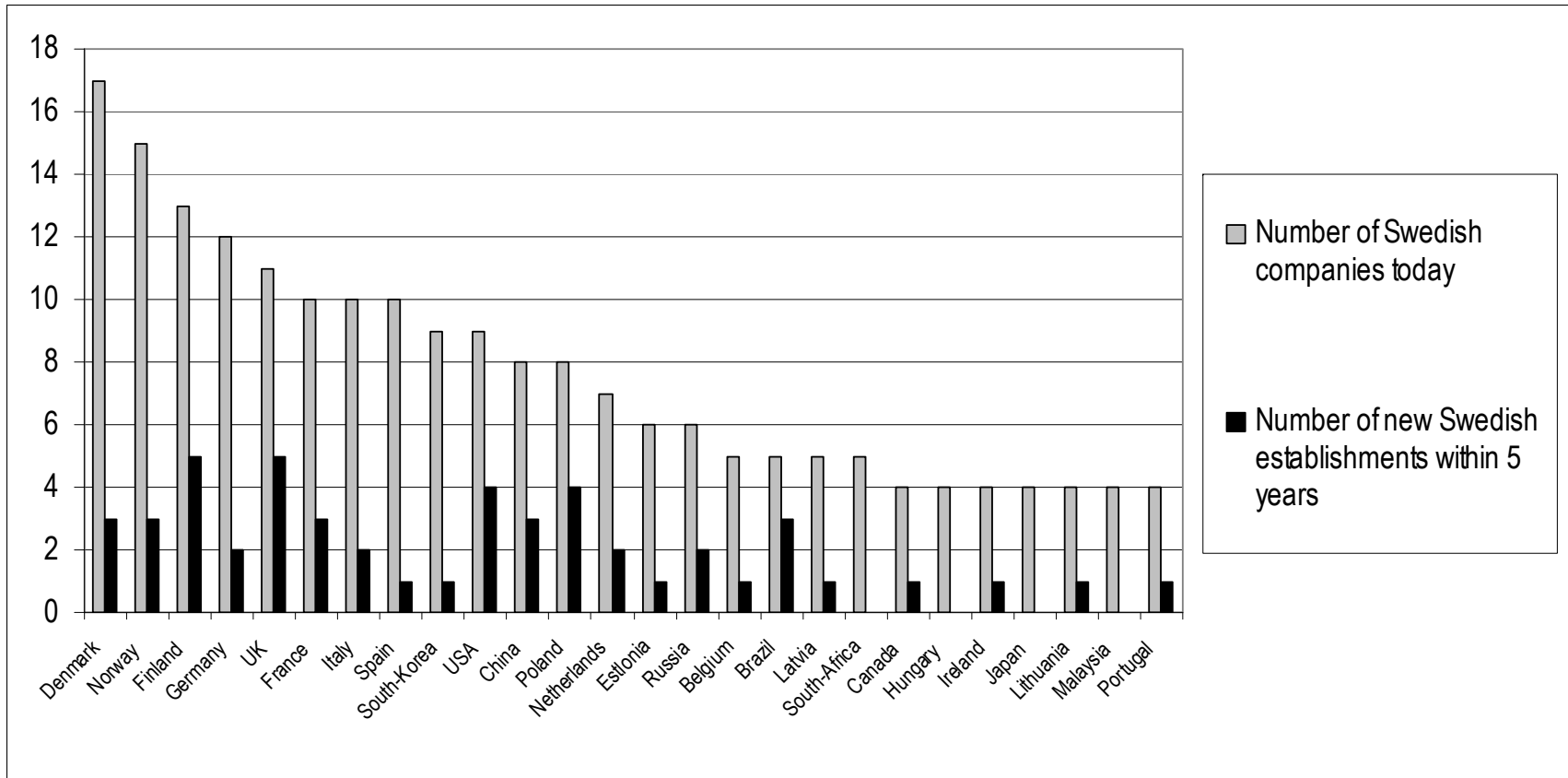
Conclusion

- There are many business opportunities for Swedish companies on the U.S. market. Swedish companies have advanced technologies and are in many areas way ahead of the U.S. There are also skilled consulting companies that should be able to find cooperation with American companies
- There are however quite a few challenges for Swedish companies. There is a certain resistance towards new technologies; intangible benefits like lower environmental impact means little if not providing real costs savings at bottom line. The industry is also highly competitive and regulated

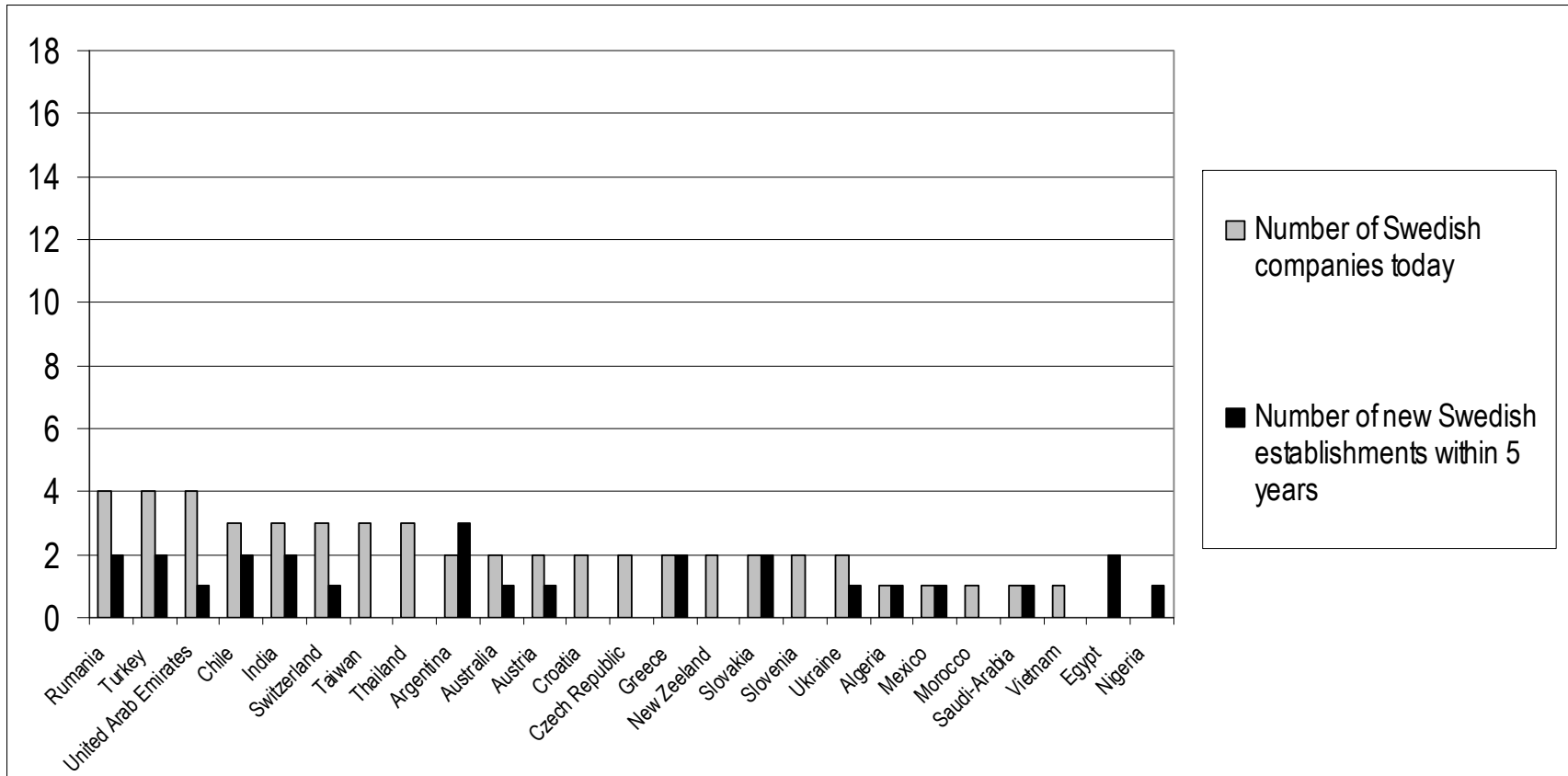
CONTENT

- Introduction
- Export market analysis
- Market prioritization
- Next steps
- Appendix:
 - Country profiles
 - Market data
 - Survey Companies

51 COUNTRIES WERE MENTIONED BY COMPANIES IN THE SURVEY (1/2)



51 COUNTRIES WERE MENTIONED BY COMPANIES IN THE SURVEY (2/2)



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38 COMPANIES PARTICIPATING IN THE SURVEY

- Renova AB
- Metso Power AB
- Envac
- Sydsånes Avfallsaktiebolag
- Norba AB
- Borlänge Energi AB
- IVL Svenska Miljöinstitutet AB
- SAKAB
- Läckby Water
- Liselotte Löf AB
- JTI
- Borås Energi och Miljö AB
- Nordifa AB
- Orwak AB
- Opsis AB
- H. A. Industri AB
- Presona AB
- Rotech Recycling Technology
- GISIP
- Röbbäcks Sweden AB
- Franssons Recycling Machines
- ScanArc Plasma Technologies AB
- Mobergs Roco Systems AB
- Botek Systems AB
- Scandinavian Biogas
- Eleiko AB
- Flexus Balasystem AB
- PROFU
- MRT System International AB
- Ingeniörsfirma R. Sjöstrand AB
- Optibag
- Pilum Engineering
- Bioprocess Control Sweden AB
- FluxSense AB
- reCulture AB
- Smedlund Miljösystem AB
- Avfallskvarn Disposer AB
- Scandinavian Enviro System