



Twinning Project IL/11

**Implementation and Strengthening the Environmental Framework for
IPPC, Resource Efficiency and Eco-Management in Israel**



Economic Tools – Diversion from Landfill & Strengthening Recycling Capacity

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Overview

- Israel remains a landfill Dependent Nation – 80%
- The Israeli recycling market is still underdeveloped compared to countries that have attained great achievements in the recycling of waste.
- Under current conditions, even if government grants are made available, it's not enough.
- PRIVATE SECTOR involvement is essential





Existing Economic Instruments in Israel

- Landfill tax and Tipping Fees
- Extended Producer Responsibility – TYRES Deposit scheme 800 NIS/ ton
- Packaging Law
- WEEE
- Bottles Deposit Law





EU & OECD Approach

- The EU and OECD waste management policy approach is moving away from landfill, towards more sustainable recycling, recovery and treatment technologies.
- The more sustainable and (in the case of recycling) financially-beneficial technologies are now the main focus of national resource strategies, as countries look to develop a circular economy approach





Economic and Policy Instruments Best Practice Overview

- Landfill Tax
- Landfill and Incineration Bans
- Extended Producer Responsibility
- Pay As You Throw
- Municipal Groupings
- Government Subsidies and Incentives

Member States who use these measures effectively have the highest recovery and recycling rates – with very little landfill and some incineration



Direction of Travel for Waste Policy in Israel

- Major changes in the next 20 years - reduction in landfill
- Separate Collection of Recyclable materials, Organic and Food waste
- Lots of Recycling, Recovery and Reuse of Materials
- Use of New technologies: AD, In Vessel Composting, MBT, Thermal Treatment





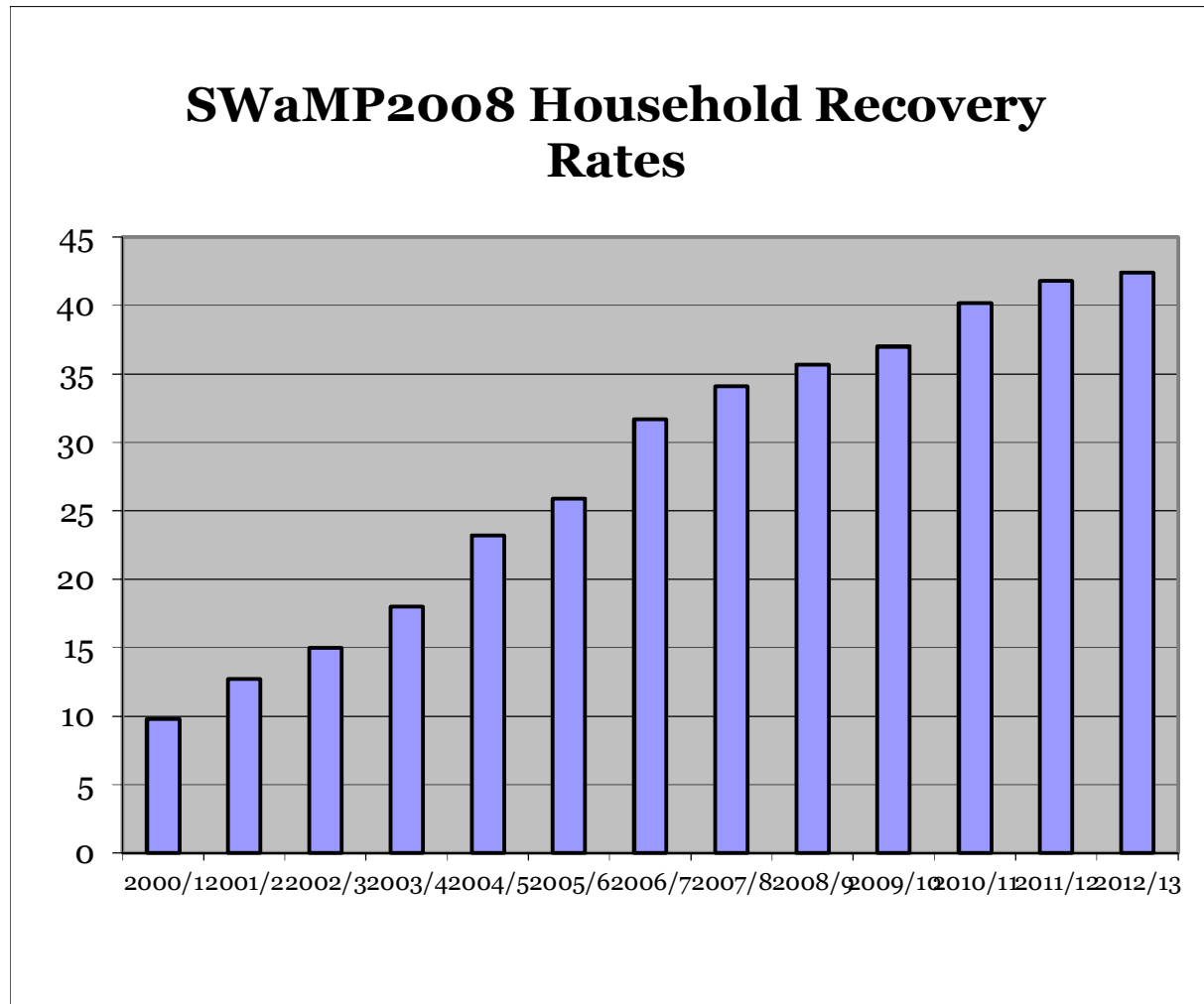
Northern Ireland – Direction & achievements

- The NI Waste policy is compliant with the EU waste directive – Key Policy Driver.
- NI developed a Waste strategy in 2000 and updated in 2013
- **NI went from 13% to 50% recycling in 12 years.**
- **No incineration but a lot of RDF (200k tons per annum)**
- Thermal Treatment proposal – Stalled by public opposition and politics





Northern Ireland - Local Government Reports





How did NI make the transition to the New Policy Approach?

- Setting the Policy and targets
- Developing a Waste Management Strategy
- Economic Instruments help deliver the above outcomes
- Combination of policy and economic tools both play a very important role in this transition
- Gradually raising the Landfill Tax
- New Laws to effect Strategy targets such as Landfill Diversion and Recycling Targets
- Strategically locating Treatment Facilities, MRF's and W2E plants – Waste Planning



Policy versus Strategy



What comes first?





Policy and Strategy for Israel

Policy

- Moving away from landfill
- Obligations to the OECD targets (the same as the EUD)
- Setting recycling targets – gradually until 2030
- Waste as a resource
- Circular Economy
- Laws

Strategy and implementation

- Projection of waste produced and landfilled
- Costs
- Financial tools
- Waste planning – Central / Local government



Landfill Tax and Tipping Fee

How does Israel compare to UK?

NIS	UK	Israel
Landfill Tax	430	108
Tipping fee	75	70
Total waste disposal	800	400-800





Tipping Fees

- The price of the tipping fee should reflect the aftercare of the landfill. The “true cost” of landfill also includes the financial values for closure and (perhaps 50 years of) aftercare.
- Competition drives towards low tipping fee prices.
- Financial assessments should assess appropriate gate fees to include aftercare.
- Should low gate fees continue Governments will be left to fund these significant costs – up to 20 Million NIS on larger Closed Landfills
- Bank Bonds for landfill – financial provision



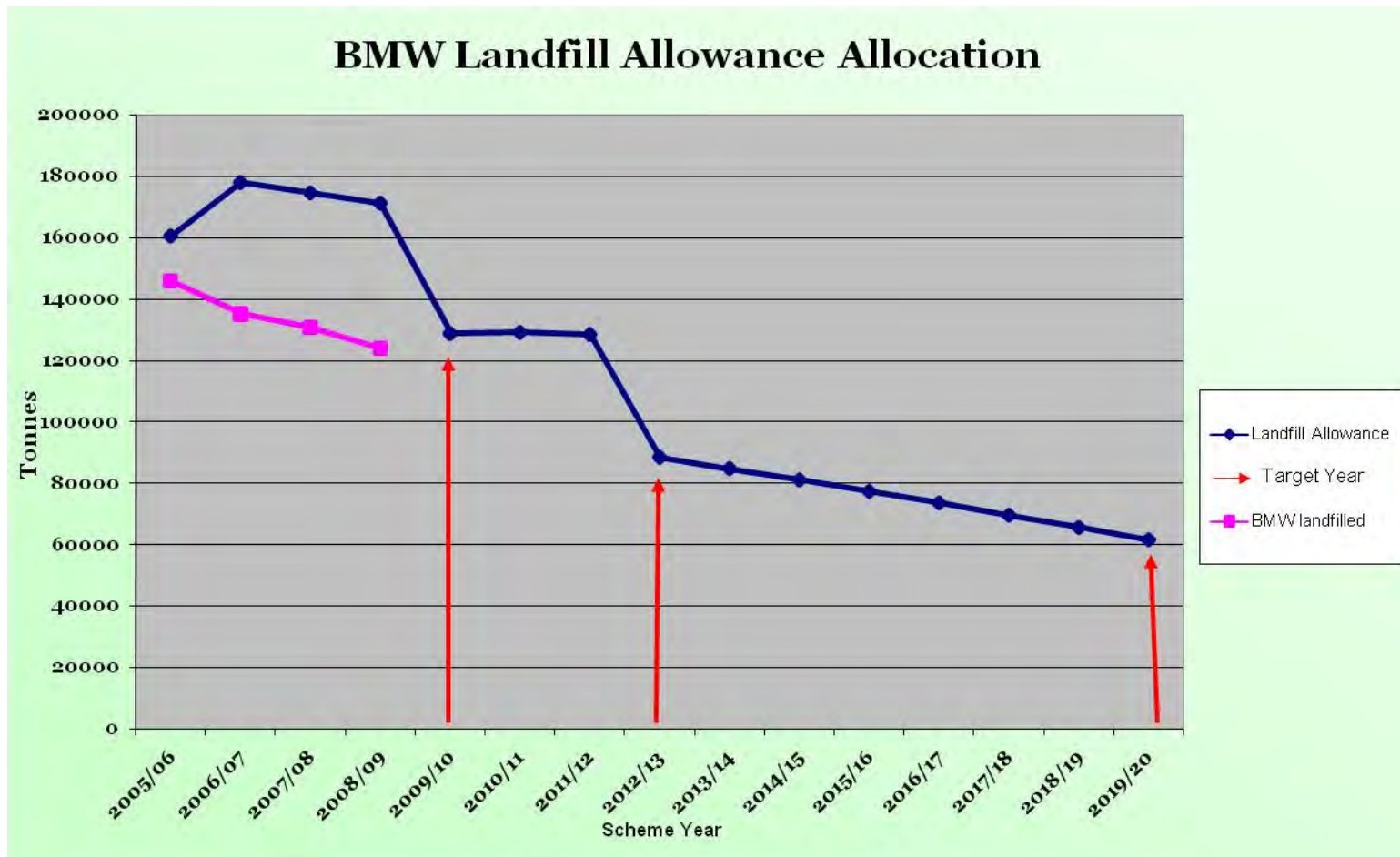


Low Landfill Costs – Implications

- Under-pricing landfill is a common error - economically and environmentally harmful.
- It can lead to significant unfunded liabilities and costs to future Government
- It can bias the market and introduce anti-competitive forces.
- Artificially cheap landfill undermines all other recycling and resource recovery opportunities.
- Low recycling rates means fewer jobs are being created in this sector. For every job we create in landfill we create 3.3 in recycling.



Statutory Compliance





Lanfill costs – UK approach

- Gradually raising the landfill tax
- Laws – financial provision for aftercare of landfill and in the event of a catastrophic event
- Conditions in business Permits - to set a minimum tipping fee but the government was against it (should be 27 pounds (including aftercare costs))





Municipal Grouping

- Municipalities coming together – 26 into 3 groups responsible for Delivery and procurement of collection and delivery of technologies Establish network of facilities
- Differences skills and abilities of large, medium and small authorities – Required assistance with Legal, procurement, financing and Planning – Government provided
- 1 Billion NIS Fund – Government Intervention to help fund Municipalities
- System of transfer stations+ Infrastructure – 3 bodies – Economies of scale – Shared Municipal resource
- 3 groups – guaranteed contract tonnages for 25 years – PPP
- Consideration of investment instruments and financing solutions





Government Support

- Central Government incentivise municipalities projects funded by both private and public funding,
- Compulsory purchase of land powers
- Governance Arrangements for cooperation between the public and private sectors
- Government supports the Accelerated passage, legal, Planning, procurement etc.
- Establish an inter-departmental team charged with accelerating the process and finding solutions to bureaucratic problems - Ministers involved in Key meetings
- Confidence of the Markets and Lending Institutions **(HOW)**



Strategic Waste Infrastructure Planning

- Strategic Waste Infrastructure Programme (SWIP) was established to ensure that Northern Ireland fulfils its obligation to contribute 'on an equitable basis to the UK' in meeting its 2020 targets under the EU Landfill Directive.
- Establishment of infrastructure takes time - Create solutions for separated waste
- Preferential treatment and assistance Permit Application - IED - make sure that they overcome such statutory obstacles as the need to secure building permits, Environmental Permits





Citizen behavioural change

- Behavioural change of the citizen from the outset is imperative for success
- Infrastructure Opposition
- Separating waste at households
- Will require continuing central and local communications strategy for an extended period
- Why does Belgium have such a high recycling rates?





Flexible Modular Technologies

- Market forces on modular, flexible waste treatment systems, such as composting, RDF and anaerobic digestion could be refreshed to examine recent developments in technology and output values.
- The use of refuse-derived fuel (RDF)
- Capital requirement to produce RDF and the conversion of existing technologies (usually cement plants or power stations) to accept RDF





Feed-in Tariffs

- Energy and Environment Ministries joined to Generate Renewable Energy and incentivise development of Waste Infrastructure
- Overview—Operators of renewable Energy Plants such as AD can get incentive payments their energy supplier if they generate their own electricity or export power they have generated and do not utilize to the National Grid. This is called a 'feed-in tariff' (FIT) and an 'export tariff'.

• Cost of Kwh of Electricity in UK £ 0.16

FIT per Kwh £0.09

Export Tariff £0.485



Feed-in Tariffs - Outcomes

- Heat and/or Power (CHP) – where the biogas which is burned on-site to generate heat, power or both
- Biomethane to Grid (BtG) – where the biogas is upgraded and biomethane is injected into the national gas grid
- The UK has 550 Operational AD plants with many more in the Planning system
- FITs have played a significant role in providing this treatment capacity along with the Renewable Energy Benefits





Green Public Procurement

- Government spend is significant in all countries
- It has proven to be a significant opportunity throughout UK and EU to utilise waste materials in Government infrastructure projects
- Diverts waste from Landfill
- Changes approach to Construction
- Site Waste Management Plans – Pre-construction Audits
- Performance specifications
- specification of 10 % recycled materials in government construction contracts – school's hospitals housing etc.



Pay As You Throw - Key Economic Instrument

- Key to Landfill Diversion and Increased Recycling
- The expression “pay as you throw” (PAYT) comes from the United States, where it describes a system of incentive-based pricing for waste management.
- PAYT has a proven track Record in Both EU and US of reducing residual waste and significantly increasing recycling
- Works Effectively in New York City! – 13% Reduction in waste + 6% increase in Recycling – challenging!





Why PAYT

Examples of PAYT from Europe and USA – based on charging on a volume or weight of residual waste (variable charging) – demonstrates:

- Dramatically increases segregation of recyclable materials increase recycling performance by up to 25 %
- Reduce overall residual waste quantities collected potential for significant operational cost savings for Municipalities
- Significant reductions in greenhouse gases generated by the sustainable management of waste materials





Why PAYT

- Increase citizen awareness levels of the need to minimise waste / recycle more
- Raises citizen awareness levels of the increasing funding pressures associated with the waste management system
- Transparent financial incentives
- Cost Neutral





- **Its Brilliant BUT!**
- However, these benefits will only be achieved if: collection / Recycling / Recovery/ composting / processing infrastructure for separated materials are in place.
- Timing of PAYT introduction is critical





A 2014 OECD SURVEY OF COUNTRIES WITH PAYT PROGRAMMES

Found that households who pay for waste collection via PAYT systems generate between 16% and 20% less waste on average compared to households that pay through other means such as taxes or a flat service fee.





PAY AS YOU THROW SYSTEMS OVERVIEW

- Higher Municipality Costs. - at outset - communication / education and start-up. However, these costs are generally recovered in the long run through savings associated with increased recycling and reduced waste disposal.
- In the US forms of PAYT programmes are utilized in 30 of the largest 100 cities, and apply to approximately 25% of the country's population.
- The number of US communities using a PAYT system grew by 70% between 1998-2008 such is scheme effectiveness.





PAY AS YOU THROW SYSTEMS

- 1) Per-Unit Service. - This includes systems in which residents purchase approved bags, tags, or sticker
- 2) Subscription Service - Residents subscribe to different levels of waste collection, often in the form of variable sized collection bins.
- 3) Weight-Based Service - Residents are charged for the weight of rubbish they generate, as measured by collection crews during kerbside pick-up.





MULTI-FAMILY DWELLINGS/HIGH RISE ACCOMMODATION

- Multi-family dwellings/ High Rise Accommodation are a challenge for PAYT schemes because costs are not easily passed on to individual residents.
- average, recycling rates for multi-family dwellings are generally slightly lower than for households
- small multi-unit complexes can be individually metered with separate kerbside bins for each unit





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- Larger multi-unit buildings often have a central bins managed by the building, or a waste chute.
- It is not feasible for residents to be made directly responsible for each unit of waste they generate
- In multi-unit building, cases with low recycling rates - Municipalities have used dirty MRF's to significantly increase recycling rates
- Charging the building owner, a fee for each unit of waste the building generates - provides an incentive to the entire building, but does not directly affect each resident.





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- Requiring residents to use licensed bags or stickers – prepaid. Can encourage noncompliance. Waste is often difficult to trace to a single unit
- Residents swipe cards – pre paid - cards to gain access to waste chutes or bin
- May have a system for weighing residents waste associated with swipe cards
- Installation of new measuring systems will increase costs– could be requirement of building codes.





COMMERCIAL SETTING PAYT

- Successful Commercial PAYT is a volume / weight based system similar to that used in High rise
- Commercial Bag programs exist but are relatively uncommon
- Best results come from separate bins for separated recyclable materials and residual waste in commercial setting





PAYT PROS

- More equitable distribution of costs to those who use waste collection and disposal services the most
- Financial incentives to reduce waste generation in all forms
- Recyclable materials source separated
- increase in composting
- behavioural change
- Greater awareness of an individual responsibility to reduce waste and increase recycling





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- Excellent waste prevention initiative
- Significant climate change benefits/ reductions in greenhouse gases if disposal route is either incineration or landfill - generated by the management and utilization of waste material
- Leads to no increase in costs for majority of Municipalities





PAYT CONS

- Potential to place a financial burden on low-income residents or large families
- Creates incentives to illegally dump waste
- Large scale investment in collection systems and processing infrastructure
- Only works well if the infrastructure and awareness is already in place
- Equity - low income families
- Equity - large families





Latest on EPR

The European Commission has recognised the system failures in the current approach and, with support from within the European Parliament, has been pushing for minimum rules for EPR. The changes will be designed to provide a strong legal framework, as well as clarification of methodologies and definitions to level the playing field among Member States,





Latest on EPR

- Research by the European Commission and the OECD has generated recommendations and guidance as to how EPR models might be strengthened, and so for producer responsibility organisations (PROs) there are likely to be changes.
- Countries that have licensed several PROs for the same sector EU see that that governments are not enforcing the law, nor monitoring or steering, to ensure a fair level playing field





Latest on EPR

- Pushing EPR up the waste hierarchy
- To date EPR has focused on the recovery of materials once they have become waste. Many fewer policies have targeted producers, who have the most control over the use and management of harmful materials. It is at this point, perhaps, that the most valuable legislative interventions could be made.
- We await Policy changes.





EPR Success stories

- Tyres, Farm plastics, Lubricating Oils and Problem Waste Streams
- Israel could benefit from EPR for Agricultural Plastic eg successful in Ireland – deposit scheme
- End of Life Vehicles – While Israel has a car scrappage system – this only deals with a small proportion of vehicles
- Considerable benefits could be had from introducing the EU ELV system – resulting in a high level of Recycling – including Plastics and a variety of Hazardous Wastes





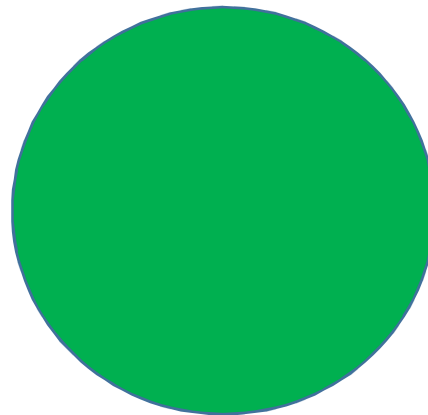
Case Studies - extended Producer Responsibility schemes in EU/ OECD have successfully covered additional products, notably:

- graphic paper
- textiles
- medicines
- fluorinated refrigerant fluids
- mobile homes
- furniture.





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Summary & Recommendations

- Develop Resource Efficient Policies and Targets
- Develop a 5-10 year Waste Strategy setting out how Israel plans to achieve these objectives and Targets for each Waste Stream
- Key elements of any Strategy are - Communications, Waste Planning, Funding , Prevention, Landfill Tax Strategy, Recycling, Delivery and Governance, Key players and who will be responsible for each element of Implementation
- Laws encompassing and reflecting objectives





Summary & Recommendations

- Landfill Tax levels are Key
- Landfill aftercare costs – How much and Who?
- Israel should assess the tipping point of the landfill tax and gradually raise the landfill tax similar to what has been done in UK.
- Provision of clarity and stability to Lending Institutions
- Resource Efficiency should underpin all your proposals
- It Can be – Has Been – Achieved many times!





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Israel have already achieved quite a lot but there remains many challenges ahead - lots still to do

Good Luck!

Thank you!

