

SESSION 2

Role of SCP in Delivering a Green Economy & SCP Tools

Green Economy Goals - Examples

National Green Economy Concept

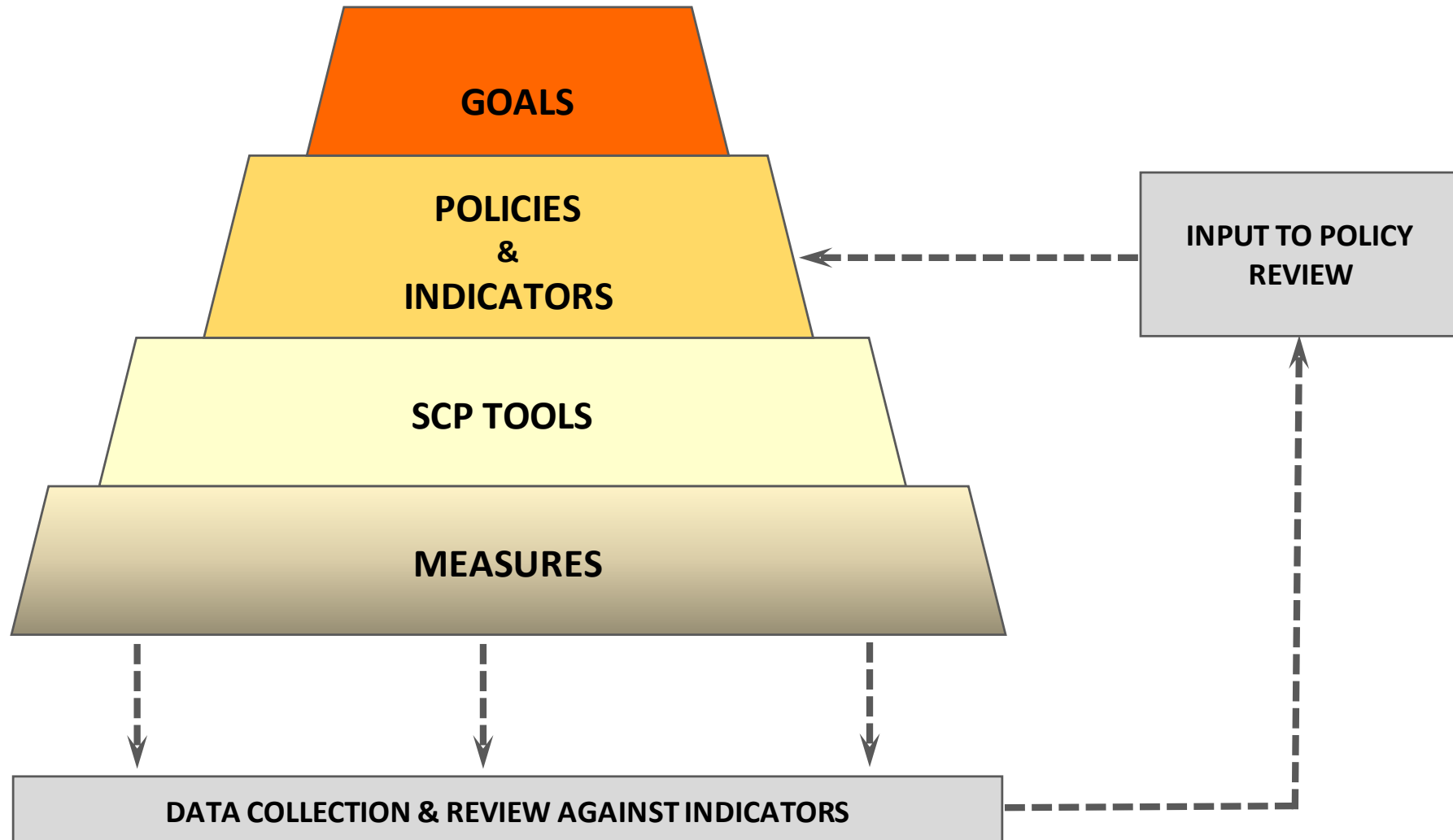
National Project Zhasyl Kazakhstan (Green Kazakhstan)

Environmental Code

European Union Green Deal (EGD)

- Climate change – Net zero GHG by 2050
- Clean, affordable energy supply
- Industrial strategy for a circular economy
- Energy and resource-efficient buildings - new and renovations
- Accelerated switch to sustainable, smart mobility
- ‘Farm-to-Fork’ Strategy - a fair, healthy and environmentally-friendly food system
- Preserve and restore ecosystems & biodiversity
- Zero pollution ambition for a toxic-free environment – air, water and soil

Goals, Policies, SCP Tools, and Measures form a Hierarchy



Example: Goal - GHG Emission Reductions

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SCP TOOLS				
MEASURES				

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Two Types of SCP Tools

1. Policy Tools – Governmental and Sectoral Initiatives

- Take effect over the medium-long term
- Regulate or stimulate producers and consumers to invest and change behaviours in ways that:
 - Are consistent with Green Economy goals and
 - Apply one or several SCP principles - resource efficiency, substitution, circularity
 - Contribute to fulfilling national and international goals & commitments

2. Tools for use by Producers / Suppliers and Consumers

- Their use is mostly voluntary
 - Stakeholders need to be persuaded and motivated to use the SCP tools - to identify actual measures and for their implementation

SCP Policy Tools

BAT – Best Available Techniques

Products - minimum standards for placing on the market

Extended producer responsibility

Value chain mapping

National emissions inventories & projections

Pricing, Taxation & Financial Incentives

Benchmarking – external

Green procurement (taxonomy)

Education – awareness

Communication – behavioural change

Institutional support mechanism / unit

Pricing & Taxation

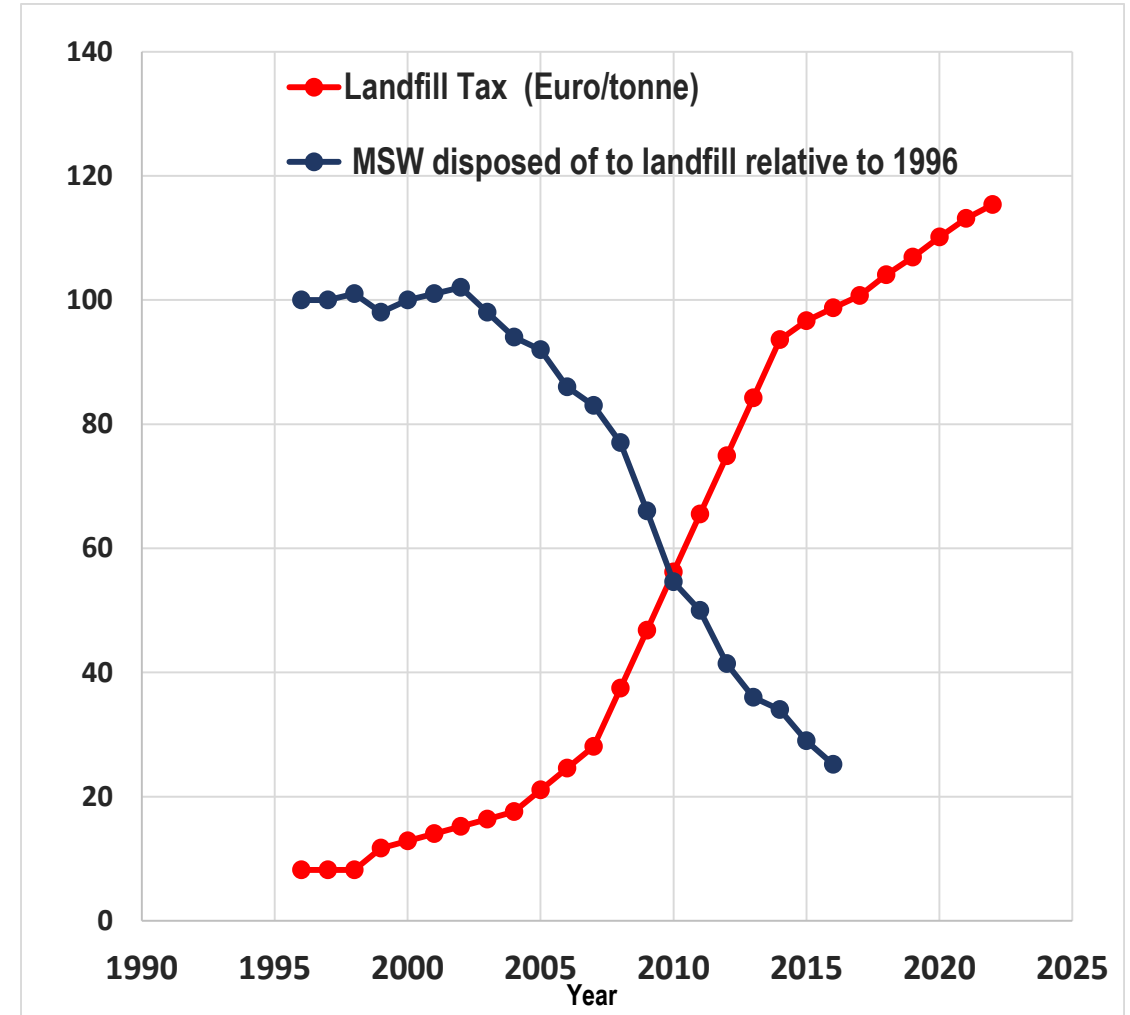
Prices set to recover the full costs (at least) of providing consumed resources – energy, water, etc - not subsidised

- Stimulates resource efficiency actions

Tax on municipal solid waste (MSW) disposed of in landfill sites, e.g. UK

- Objective: divert MSW from disposal to landfill - encourage the recovery and recycling of materials and the separate treatment & use of biowastes
- Acts through: raising the 'effective' price of using landfill for waste disposal
- Requires: an enabling environment

Diversion of MSW from Landfill - UK: resource efficiency (and circularity)



Extended Producer Responsibility

An EU regulatory approach

- Producers / Suppliers must take responsibility for ensuring that specified, end-of-life products re-enter the production cycle
 - Motor vehicles, Refrigerators, Batteries; Electronic and ICT goods, etc
 - National systems developed to receive and recover / recycle such end-of-life goods
 - Difficulties can arise when producers and consumers lie in different markets
- Embodies the circularity principle of SCP:
 - Producers of specified goods should adopt cleaner design - a practitioner's SCP tool – to facilitate easy disassembly and materials recovery

Value Chain Mapping e.g. Agriculture



BAT (Best Available Techniques)

A central instrument of the EU's industrial policy – Industrial Emissions Directive

- Applies to activities that can be highly polluting, e.g.
 - Energy production & transformation, textiles, chemicals, ferrous & non-ferrous metals, waste management sites
 - Considers impacts on air, water and land – integrated permitting
 - Permits place onus on operators to apply BAT Reference documents (BREF) and BAT Conclusions within specified or agreed dates

BREF Documents

- Comprehensive, detailed review of issues and available techniques
 - Operational management – low-cost changes in operations
 - Investment in measures
 - Benchmarks – BAT associated environmental performance levels (BAT-AEPLs)

BAT Conclusions

- Summary of best practice
- Applicable to new plants but harder to apply to existing plants

Benchmarking – External (1)

Specific Resource Consumption (SRC):

- Average Resource Consumption divided by Average Production
- Comparing enterprise SRCs in an industry sector can be useful at a national policy level
- Points to scope for improvement
- Applies similarly to emissions per unit of production

There are limitations though

- Crude, ‘broad-brush’ assessment – wide ranging values
- Production systems must be comparable

Example: BAT-AEPLs for Water Consumption – Textiles production

WET PROCESS	MODE	BAT-AEPL (m ³ /tonne)
Bleaching	Batch	3-48
	Continuous	3-8
Scouring	Batch	2-43
	Continuous	2-20
Washing synthetics	-	5-20
Dyeing - fabric	Batch	10-175
Dyeing - yarn	Batch	3-140
Dyeing – loose fibre	Batch	13-62
Dyeing	Continuous	2-16

Benchmarking – External (2)

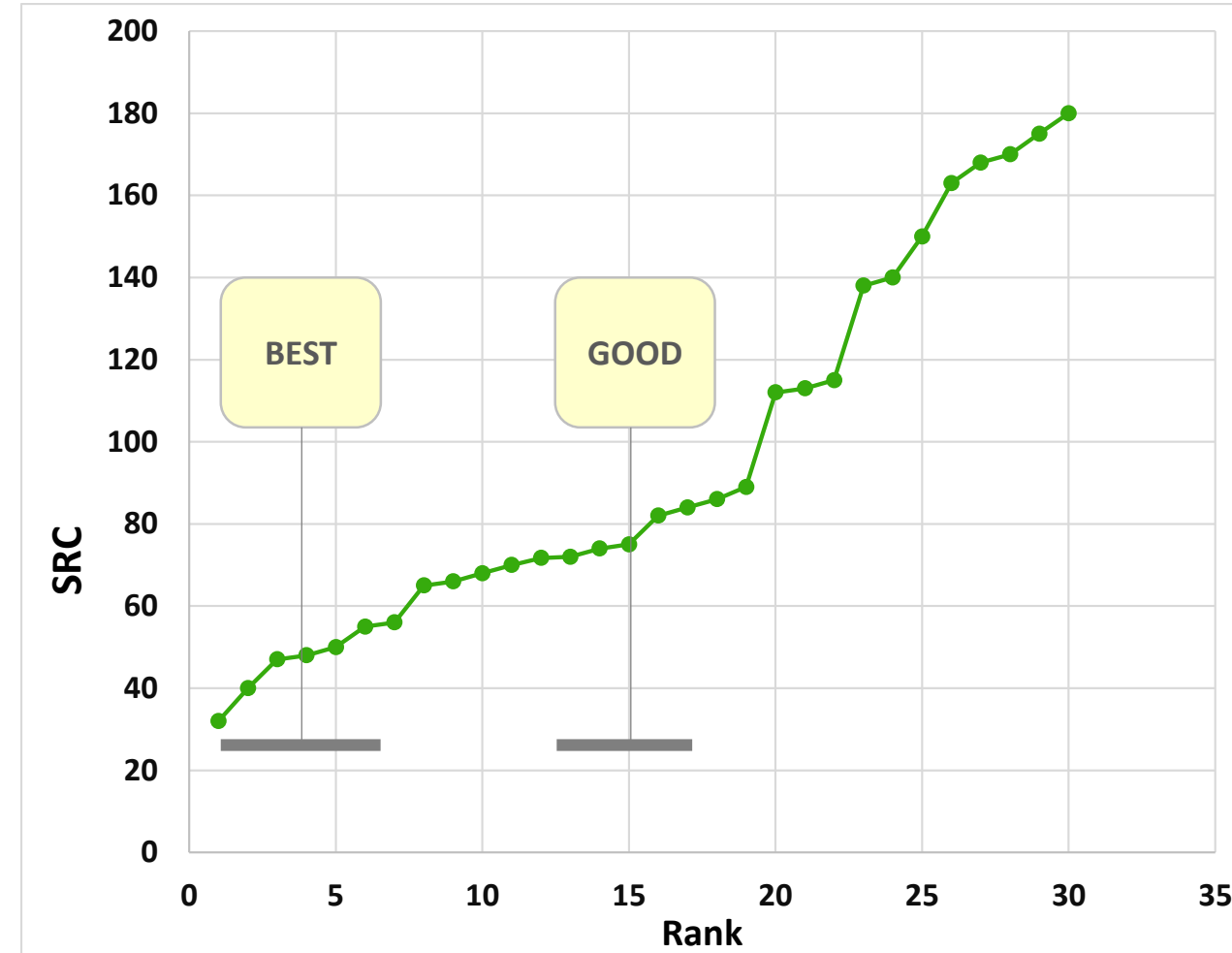
External benchmarking enables good & best practice norms to be identified within a sector

- Good Practice: e.g. +/- 1 decile around the median of comparable plant performance
- Best Practice: e.g. top 2-decile performance

Applied at sectoral level

- It can prompt reviews of practice in specific plants to identify and act on
 - What works well
 - Poor practices to be eliminated
- Comparisons with international data can help identify if improvement is needed

Best vs Good Practice - Illustration



Benchmarking – External (3)

One issue with external benchmarking is that the SRC of a given production plant typically varies with the rate of production

- Examining monthly figures over 12-36 months may reveal this

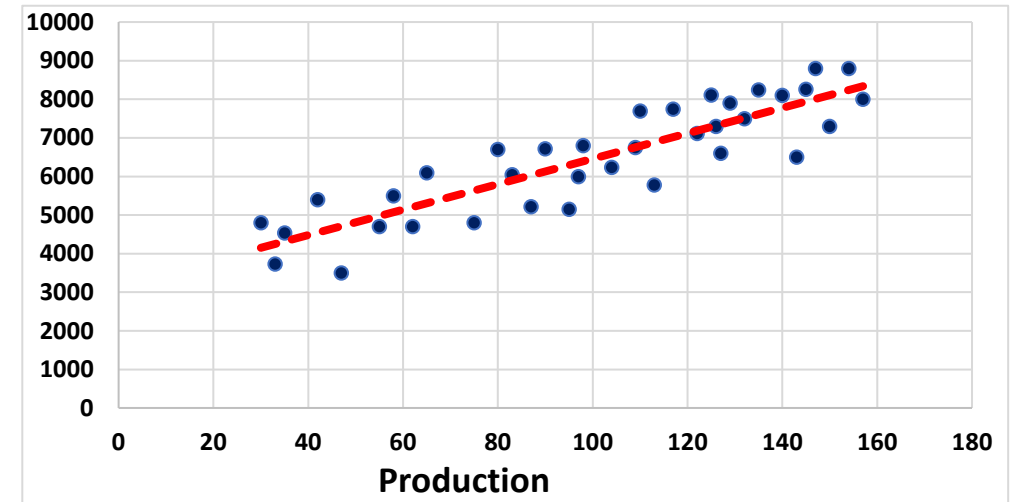
Causes can include

- Several product lines
- Frequency of operational stops-starts
- Losses from production
- Equipment efficiency varying with throughput
- Process changes

For a given plant

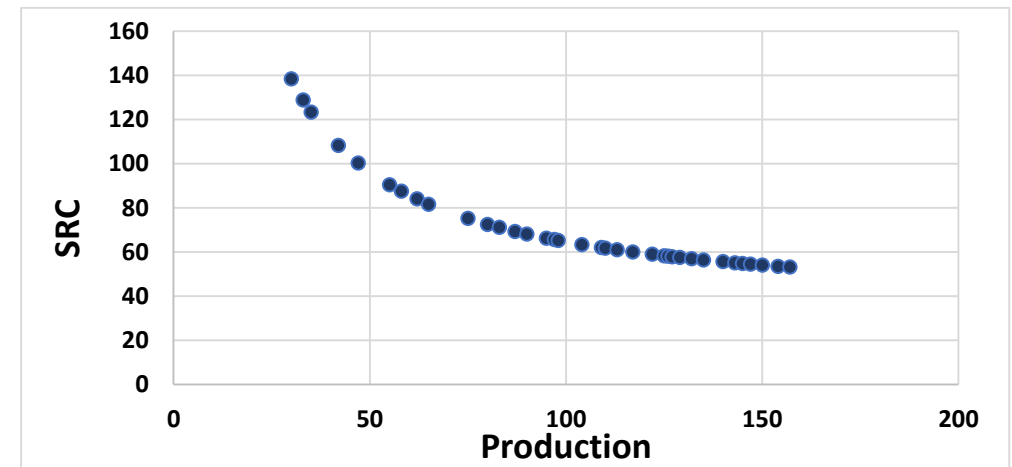
- Internal benchmarking uses the graph of historic consumption vs production to compare future with past performance

Consumption vs Production



Best Fit: Consumption $\approx 3\,160 + 33 \times \text{Production}$

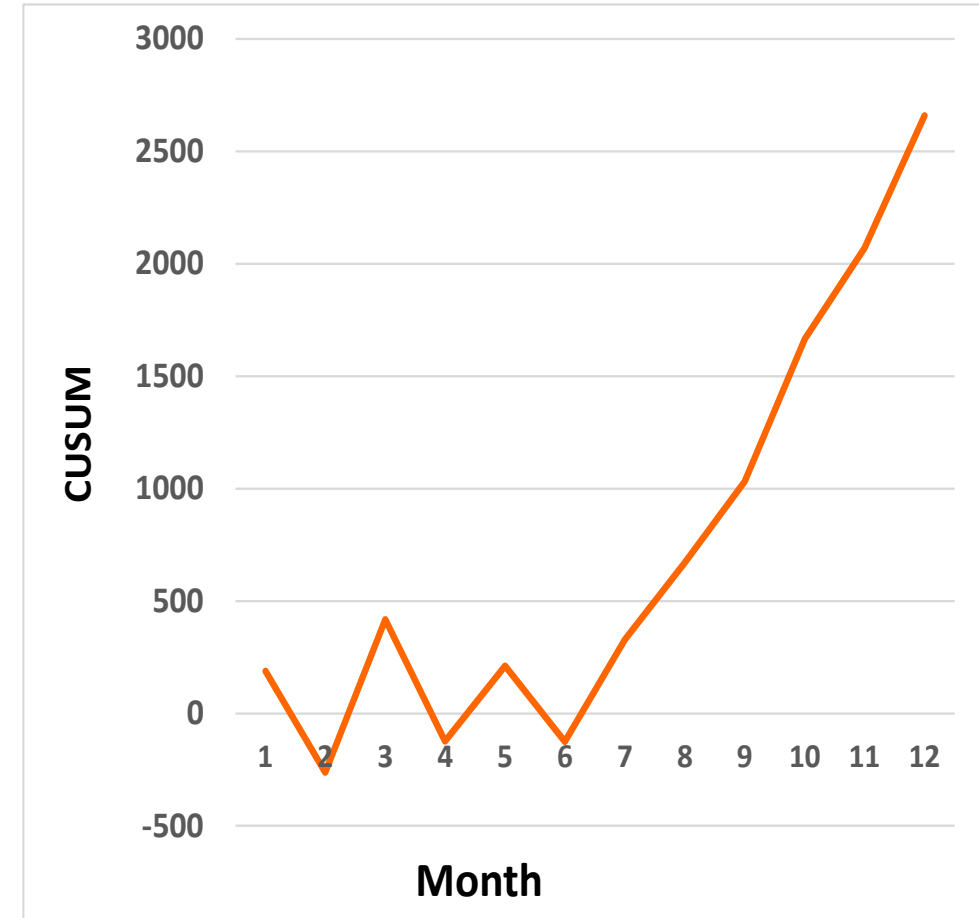
SRC vs Production



Internal Benchmarking – Introduction

Month	Production Units	Predicted Consumption (A)	Measured Consumption (B)	Difference (B – A)	CUSUM of Differences
1	100	6461	6650	189	189
2	80	5801	5350	-451	-262
3	90	6131	6810	679	417
4	110	6791	6250	-541	-124
5	70	5471	5805	334	211
6	125	7286	6950	-336	-126
7	85	5966	6420	454	329
8	95	6296	6640	344	673
9	60	5140	5500	360	1032
10	110	6791	7425	634	1666
11	95	6296	6700	404	2070
12	90	6131	6720	589	2659

Cumulative Sum of the Differences (CUSUM) vs Month



➤ Predicted Units of Consumption $\approx 3160 + 33 \times \text{Production}$

'Soft' Policy Tools

Communication

- Raise awareness of the public, producers and Suppliers
- Guidance and information targeted to each audience

Institutional Mechanism/s

- Green Hub
- Dedicated programmes e.g. the UK's WRAP (Waste and Resources Action Programme)

Education

- Schools
- Universities
- Technical Colleges etc



Food Waste Reduction Roadmap

Whole chain food waste reduction plan toolkit

August 2020

SCP Tools for Practitioner Use

Cleaner design

Life-cycle-analysis

Product reformulation

Providing products as services

Good Practice Guidance & Case
Studies

Environmental management
system

Meter, monitor, sample

Separating wastes at source

Baseline assessment

Mass & Energy balancing

Internal benchmarking

Walk-through audit

‘Fishbone’ cause & effect analysis

Energy audit

Appointing SCP ‘champions’

Green purchasing codes

Discussion / Q&A