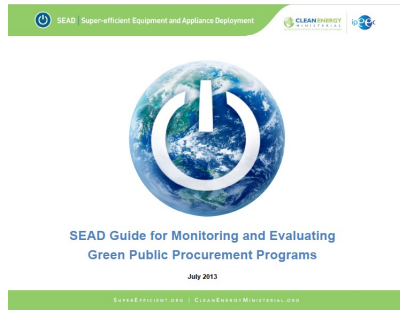


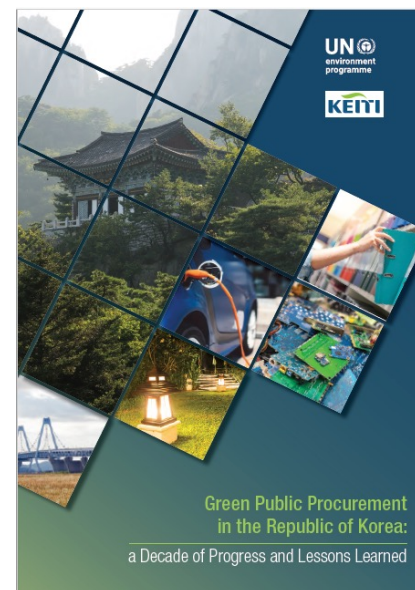
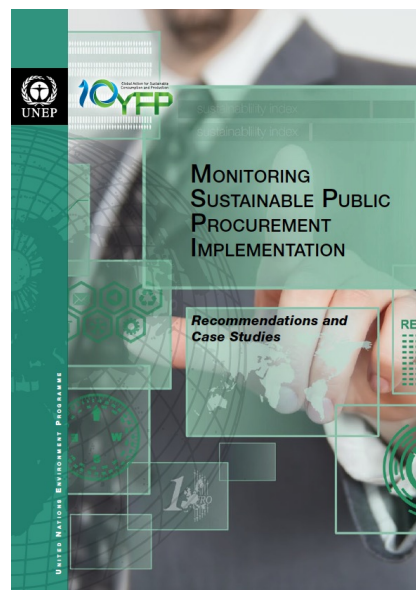
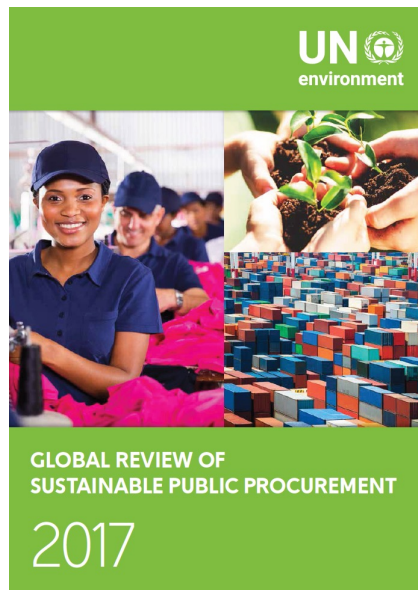
Overview of different approaches to measure SPP impacts

Asia Pacific GPP Network webinar event
MEASURING THE IMPACT OF GPP
07 June 2022

Bettina Schaefer
bettina@bettinaschaefer.cat

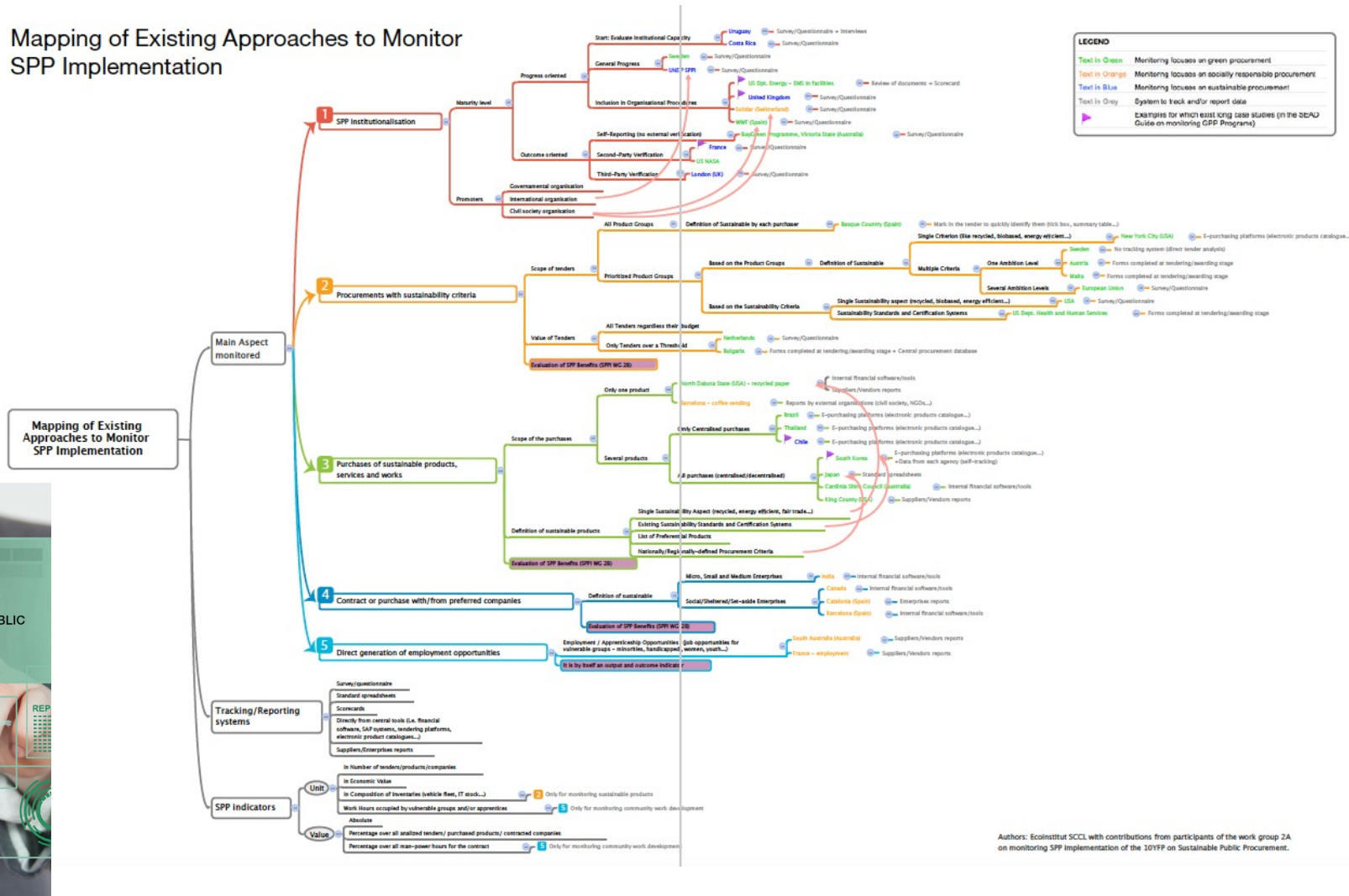


Monitoring and evaluation of SPP implementation



Monitoring and evaluation of SPP implementation

Mapping of Existing Approaches to Monitor SPP Implementation



Monitoring and evaluation of SPP implementation

INSTITUTIONALISATION (process)

- **Institutionalization** refers to the process and actions undertaken by an organization to integrate and embed SPP in that organization's culture and daily operations.

OUTPUTS (procurement activities)

- **Outputs** are the direct results of the procurement activities and can be divided into four groups: i) procurements, ii) products, contracts, iii) direct iv) generation of employment

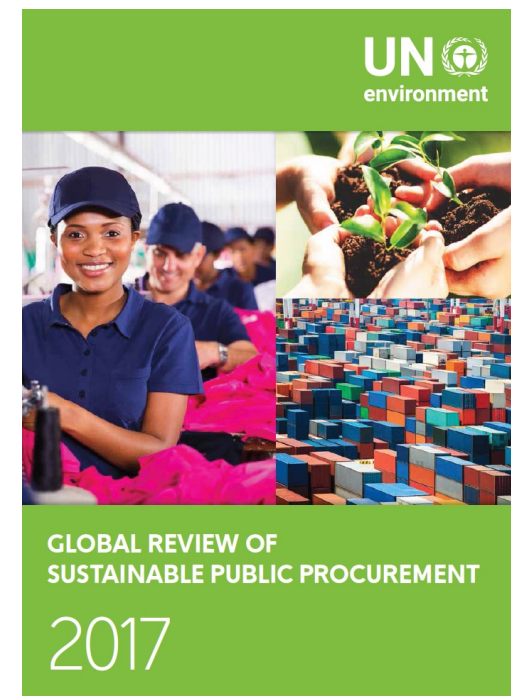
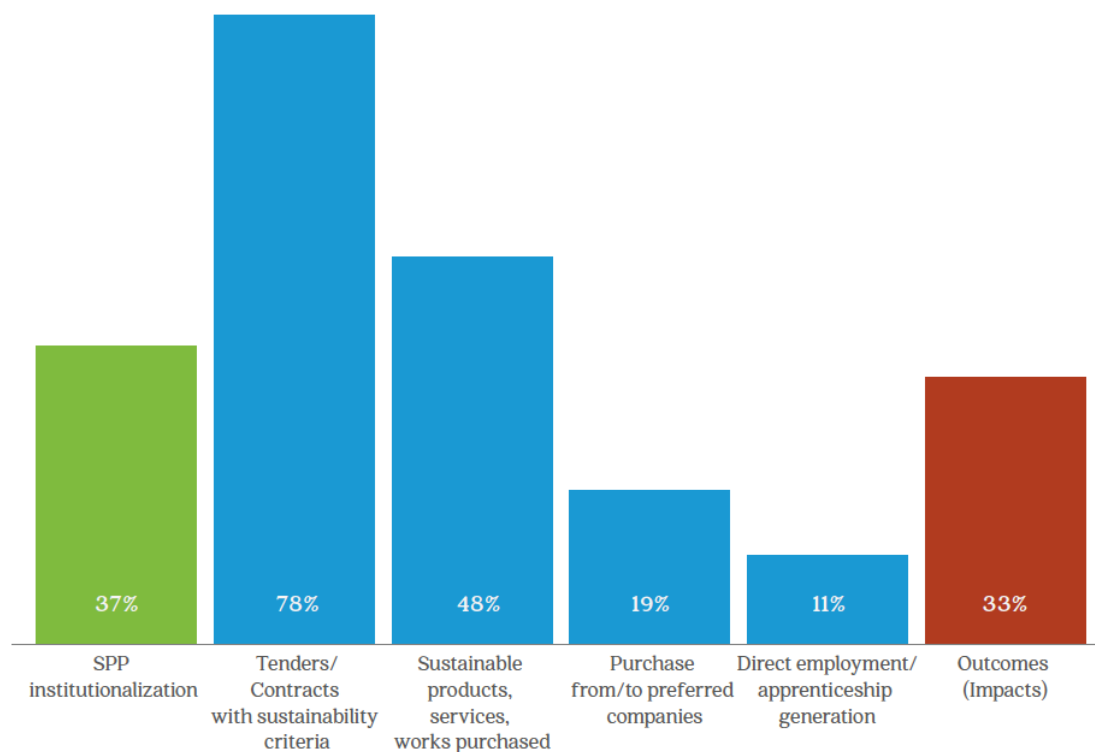
OUTCOMES (environmental and social benefits)

- **Outcomes** are the benefits to, or impact on, the environment and society generated by the SPP practices.

Monitoring and evaluation of SPP implementation

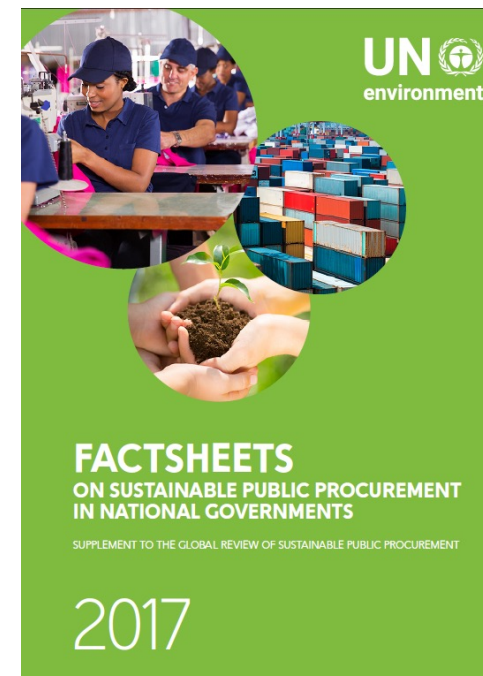


Figure 16. SPP aspects monitored by national governments



National Governments that reported SPP impact measurement

Denmark	(case studies; economic savings, CO ₂ emissions reduction, water consumption reduction)
Finland	(through EU Study, measuring CO ₂ and financial impact)
France	(social integration clauses: type of beneficiary, number of full-time job positions created, etc.)
Germany	(on regional level, Federal State of Berlin, study on cost savings and environmental impact)
Japan	(GHG emissions reduction through the purchase of green products and services)
Netherlands	(some fragmented data available)
Korea	(Reduction of CO ₂ -equivalent emissions / Economic benefits linked to the reduction of CO ₂ emissions / Number of green economy-related job creation)
Spain	(saving of water, paper, energy)
United States	(indirectly through environmental performance evaluation: use of renewable energy and reduction in GHG emissions, in energy intensity, in potable water intensity and in petroleum use.)



Monitoring and evaluation of SPP implementation

INDICATORS FOR INSTITUTIONALISATION (process)

- Overall GPP policy, law, plan, etc. in place
- GPP action plans at organisational or department level
- Procurement legal framework includes GPP provisions
- Leadership, responsibilities, and coordination roles/mechanisms established or assigned
- Staff dedicated to supporting the implementation of GPP
- Training/Capacity-building of practitioners on GPP
- Categories of products, services, and works prioritised and with criteria developed
- Procurement procedures and tools integrating GPP
- Support activities and resources available/developed
- Monitoring and reporting systems in place

Monitoring and evaluation of SPP implementation

INDICATORS FOR OUTPUTS (procurement activities)

Procurements with environmental criteria

- Number of procurements with environmental criteria
- Financial value of procurements with environmental criteria

Green **products, services or works** purchased

- Number of green products purchased
- Financial value of green products purchased

Contract or purchase with/ from **preferred companies**

- Number of contracts awarded to preferred companies
- Expenditure on preferred companies

Monitoring and evaluation of SPP implementation

INDICATORS FOR OUTCOMES (environmental and social benefits)

Environmental benefits

- Water, energy and (toxic) materials savings
- Greenhouse gases and other air emissions reduction
- Waste generation reduction

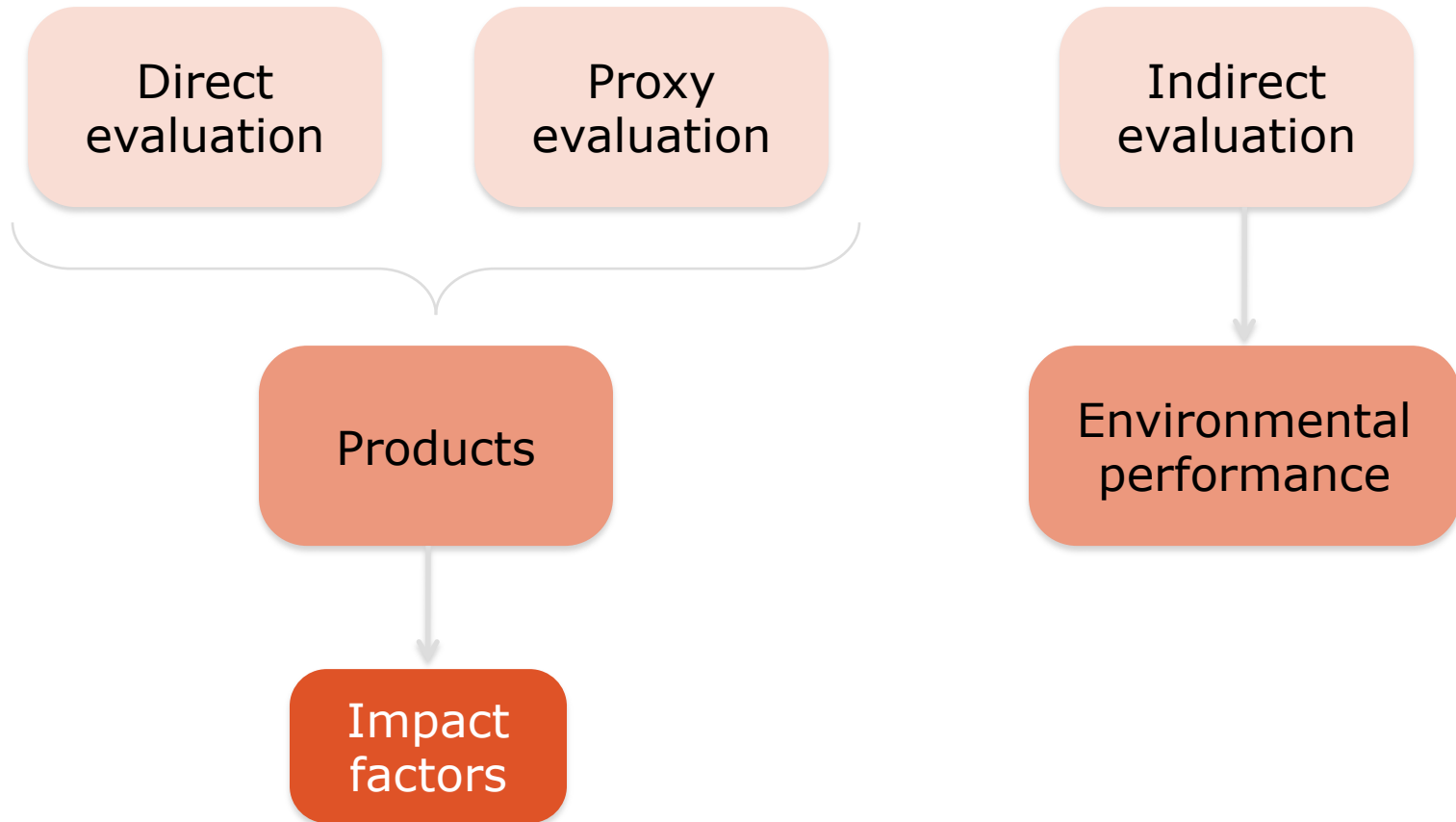
Economic benefits

- Costs savings (from a life-cycle perspective)
- Externality costs savings

Market transformation

- Number of ecolabeled products and companies
- Market share of ecolabeled products
- Number of jobs created in the green economy

How to measure SPP outcomes



Different approaches and initiatives

- Cost-benefit analysis to promote the procurement of greener products like:
 - EU cost-benefits of GPP
 - Chile

Table 19. Different examples of approaches to the evaluation of SPP benefits

Potential benefits of implementing SPP	• European Commission (2007). Costs and Benefits of Green Public Procurement in Europe. Part 1: Comparison of the Life Cycle Costs of Green and Non Green Products. • Government of Chile (2014). Manual on Sustainable Public Procurement - With a Focus on Cost-Benefit Analysis (CBA). • International Institute for Sustainable Development (2016). Green Public Procurement in China: Quantifying the Benefits.
Benefits of actual sustainable procurement	• United Nations Environment Programme and Wuppertal Institute Collaborating Centre on Sustainable Consumption and Production (2011). Sustainable Public Procurement in Urban China: How the Government as Consumer Can Drive Sustainable Consumption and Production. • United Nations Environment Programme (2012). The Impacts of Sustainable Public Procurement: Eight Illustrative Case Studies. • Danish Environmental Agency (2013). Business Cases: Green Procurement. Green Procurement and Green Products Generate Growth. • GPP 2020 (2016). Tender Compilation: Mainstreaming Low-Carbon Procurement.

Different approaches and initiatives

Case studies to showcase the benefits of SPP to win political support like:

Denmark

“Business Cases for Green Procurement (2013)”

“Seven business cases for green procurement presents examples of public procurement contributing to the green transition of society. Focus is on the effects of green procurement the suppliers in regards to job creation, innovation, export, and marketing opportunities”

<https://mst.dk/media/mst/68594/All%20cases%20UK%20endelig.pdf>



Different approaches and initiatives

- China, Switch Asia Project

Box 12. Measuring Environmental Benefits in the Project SPP in Urban Administrations in China

The Project Sustainable Public Procurement in urban administrations in China (SuPP-Urb China), funded by the EuropeAid SWITCH-Asia Programme, aims at implementing sustainable public procurement standards in municipal Public Procurement Centers in Tianjin, Qinhuangdao, and Lanzhou and to mainstream their application in China.

To assess the positive environmental impacts of SPP actions in the three target cities, the Environmental Management College of China developed a simple spreadsheet for monitoring and comparing environmental benefits achieved. Users only need to input data and the final results are automatically calculated and shown by indicator.

The monitoring focuses on four product groups:

- Electric appliances: computers, printers, copy machines, refrigerators, air-conditioners, lighting facilities;
- Paper: office paper, paper for printing documents;
- Office furniture: wooden furniture;
- Vehicles: official cars, busses for public transport.

For paper and furniture, impacts during the production phase (and some upstream impacts) were used as environmental conversion factors.

For electric appliances and vehicles, impacts linked to the use phase were selected to estimate the environmental impacts reduction. In both cases, proxy evaluations were conducted.

Figure 6. Environmental Benefits achieved with SPP in Tianjin, Lanzhou, and Qinhuangdao, China (2010-2011)



Source: Renzhi, Z. and Mingshun, Z. (2011). Methodology for Monitoring Environmental Benefits of Sustainable Public Procurement. Sustainable Public Procurement in Urban Administrations in China. An action under Europe Aid's SWITCH-Asia Programme Paper No.: 09_EN/CN. Environmental Management college of China. Graphic from: Philipps, S. et al (2011). Sustainable Public Procurement in Urban China. How the Government as Consumer Can Drive Sustainable Consumption and Production. UNEP/Wuppertal Institute Collaborating Centre on Sustainable Consumption and Production.

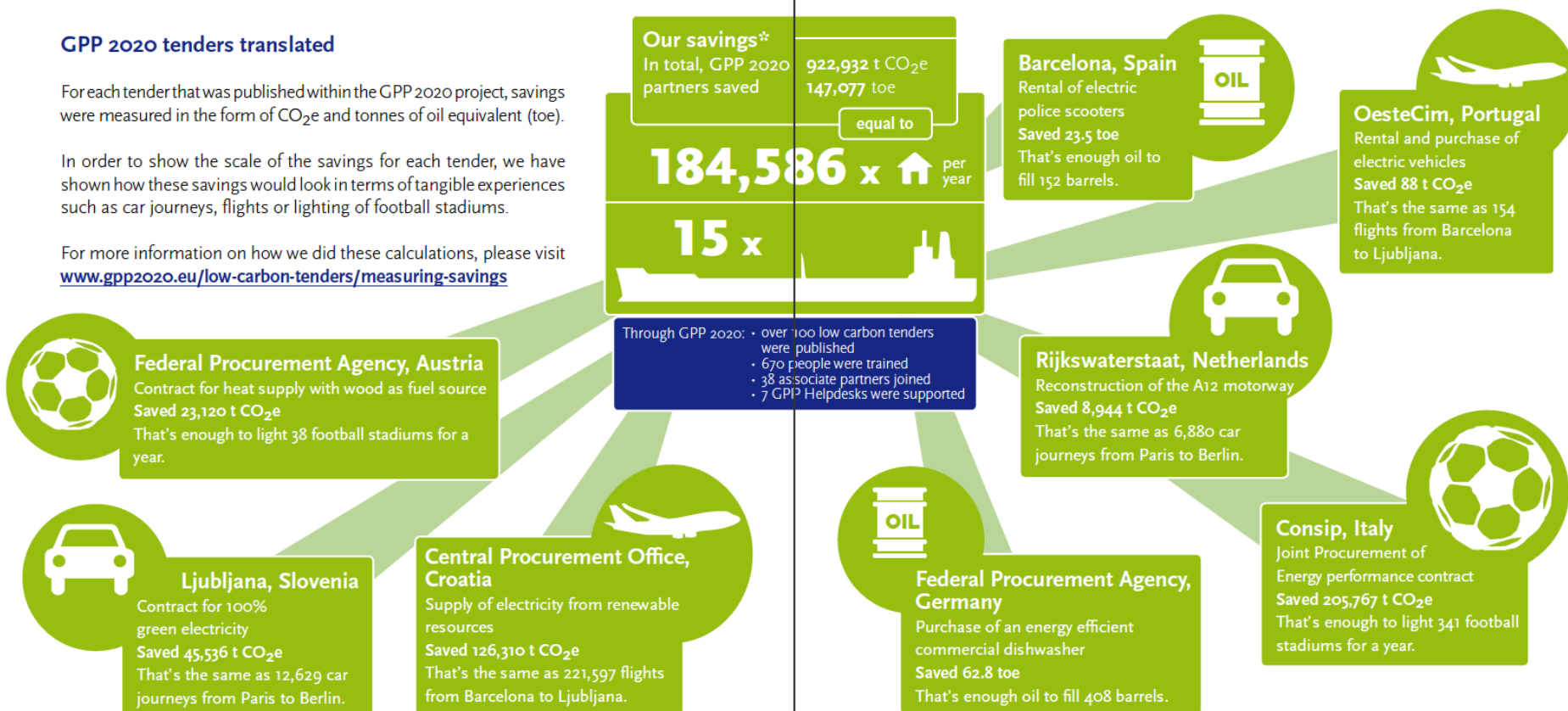
Different approaches and initiatives

GPP 2020 tenders translated

For each tender that was published within the GPP 2020 project, savings were measured in the form of CO₂e and tonnes of oil equivalent (toe).

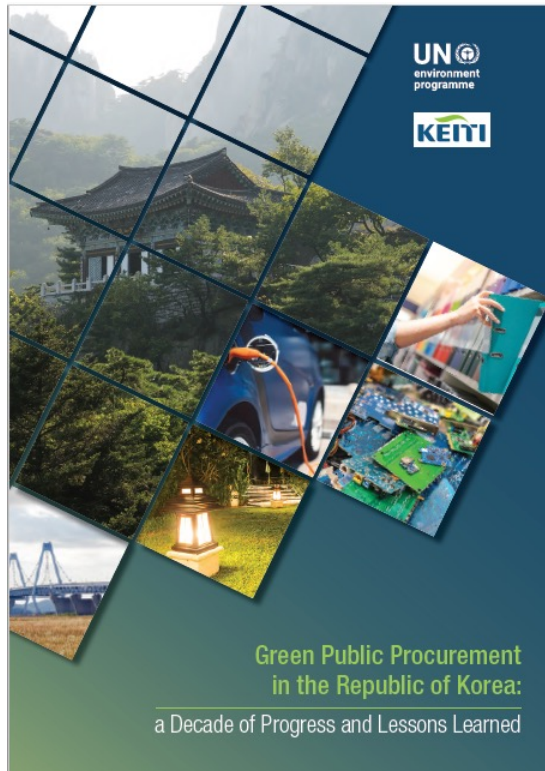
In order to show the scale of the savings for each tender, we have shown how these savings would look in terms of tangible experiences such as car journeys, flights or lighting of football stadiums.

For more information on how we did these calculations, please visit www.gpp2020.eu/low-carbon-tenders/measuring-savings



*Data as of 30.04.2016.

Korea: GPP Impact Measurement



- Presentation of Korea's GPP impact measurement methodology and
- Benchmark against other approaches

KEITI Indicators (from KONEPS and directly reported by authorities)

Total expenditure on green products (million USD)

% GPP over the total expenditure in GPP related categories
--

Reduction of CO2 equivalent emissions from the shorter list of green products (in thousands of tons)
--

Economic benefits linked to environmental impact reduction (million USD) from total purchases executed by PPS

Job creation (individuals) ⁵⁴
--

PPS Indicator (purchases through KONEPS only)

% of GPP over the total (domestic) purchases executed by PPS ⁵⁵
--

Korea: SPP measurement integrated in e-procurement

- Centralised online-procurement combined with decentralised procurement
- Online information system on green products
- GPP on-line data tracking system
- Additional online reporting of decentralised procurement

[▶ 현재문서 내려받기](#)

[▶ 표준양식 내려받기](#)

[▶ 재출](#)

[▶ 구매계획 수정하기](#)

[▶ 작성계획 올리기](#)

분류검색

검색

2013년 감사원 계획 작성표

(금액단위 : 천원)

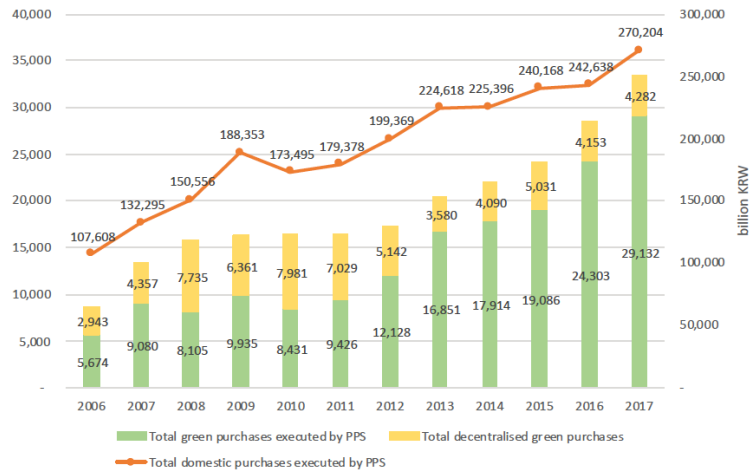
환경경상품분류			총구매(A)		환경경구매(B)		비율(% B/A)	
			수량	금액	수량	금액	수량	금액
합계			6,419	946,066	4,205	758,836	65.5	80.2
사무기기	복사기		20	72,000	10	30,000	50	41.7
	팩시밀리		20	6,900	16	5,520	80	80
가전제품	세탁기		0	0	0	0	0	0
	식기세척기		0	0	0	0	0	0
	냉장고		0	0	0	0	0	0
	공기청정기		0	0	0	0	0	0
	텔레비전 및 비디오프로젝터		15	9,000	15	9,000	100	100
	음식물쓰레기 감량화기		0	0	0	0	0	0
	에어컨디셔너		0	0	0	0	0	0

(A) : 조달청, 이마켓 등 각 연계시스템을 통해 합산된 내역
(B) : "연계시스템 환산실적(A)"에 대한 수정/보완(가감) 내역

2012년 감사원 실적 작성표 (단위 : 천원)

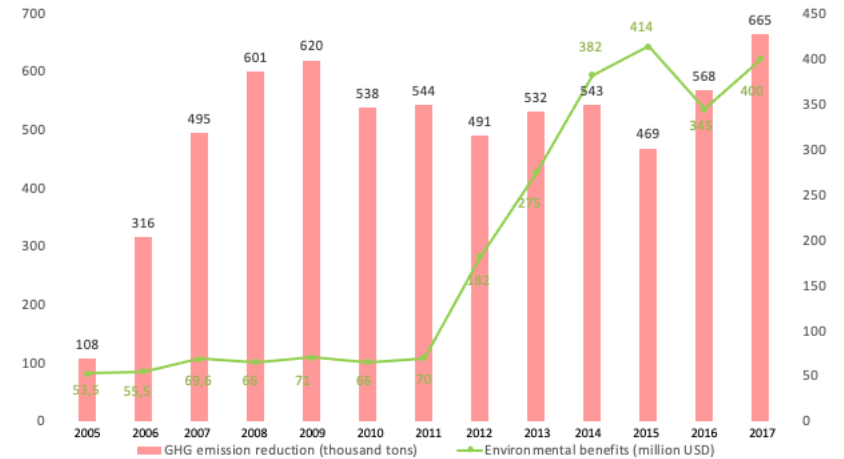
환경경상품분류	연계시스템환산실적(A)				실적수경보완(B)				총합계(A+B)			
	총구매		환경경구매		총구매		환경경구매		총구매		환경경구매	
	수량	금액	수량	금액	수량	금액	수량	금액	수량	금액	수량	금액
합계	11,8	1,214,4	6,61	789,78	0	0	0	0	11,8	1,214,4	6,61	789,78
복사기	11	65000	8	23360	0	0	0	0	11	65,000	8	23,360
팩시밀리	17	4475	17	4475	0	0	0	0	17	4,475	17	4,475
세탁기	0	0	0	0	0	0	0	0	0	0	0	0
식기세척기	0	0	0	0	0	0	0	0	0	0	0	0
냉장고	0	0	0	0	0	0	0	0	0	0	0	0
공기청정기	0	0	0	0	0	0	0	0	0	0	0	0
텔레비전 및 비디오프로젝터	1	2582	1	2582	0	0	0	0	1	2,582	1	2,582

Korea SPP measurement result indicators



Expenditure of centralized and decentralized GPP in the Republic of Korea from 2006 to 2017

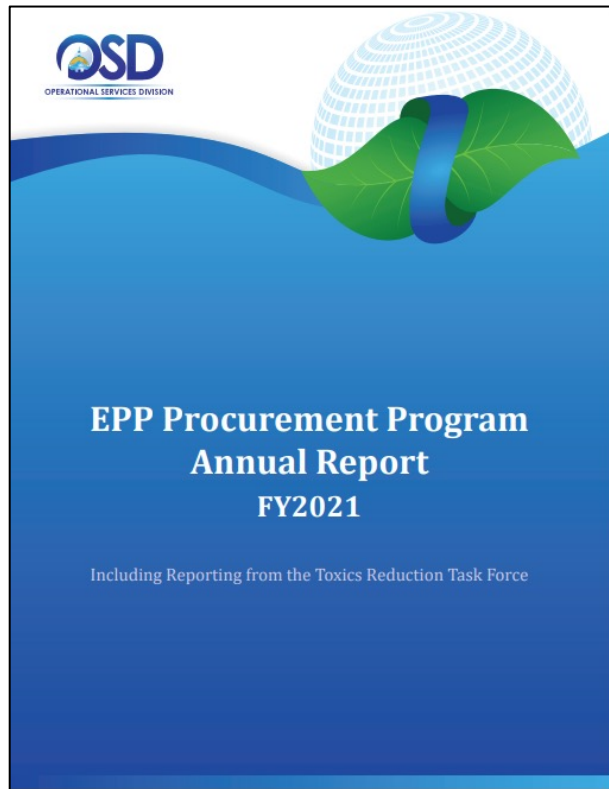
Environmental Impacts



(source: Korea Environmental Industry and Technology Institute, 2021)

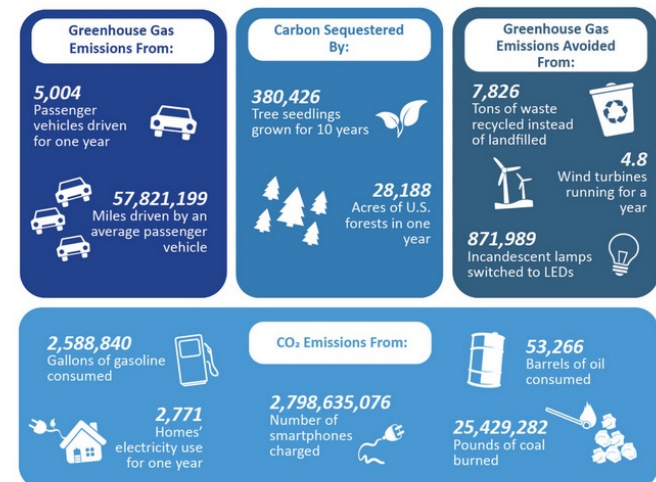
Environmental Impacts: GHG Emission reduction and environmental benefits

Massachusetts – Environmentally Preferable Products (EPP) Procurement Program



	FY21
Estimated EPP spending from Statewide Contracts	\$433M
Estimated annual savings, primarily from energy efficient purchasing choices	\$2.2M
Reduction in lifetime metric tons of carbon dioxide equivalent (MTCO _{2e}) ¹¹ , primarily from purchasing energy efficient products, those containing post-consumer recycled content, or materials diverted from disposal	319,116
Estimated tons of waste diverted from disposal to recycling	13,049

This is equivalent to the following¹¹:



¹¹ Using the US EPA's Greenhouse Gas Equivalency Calculator: <https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator>

Using Vendor Reporting Management Tool for Easier Environmental Data Reporting:
<https://vimeo.com/416076874/fd13377d58>

Comparison of different approaches

Aspects to consider:

- **Purpose** of the approaches
- **Product categories** from which benefits are estimated
- **Data required** and data gathering
- **Definition of Green** versus conventional products
- **Calculation** of benefits
- Environmental benefits reported
- Socio-economic benefits reported

Aspect	Republic of Korea	Japan	State of Massachusetts	Netherlands	State of Berlin
Frequency	Annual (since 2005)	Annual (since 2006)	Annual (since 2012)	Annual (since 2017/18)	One-off (in 2014/15)
Scope	All public sector	National government	Statewide contracts	All public sector	State government
Data required	No. products	No. products	No. products + Amount of waste	No. products	No. products + Product stock + Amount of waste
Data used	Actual annual purchases	Actual annual purchases	Actual annual purchases in supply contracts + Actual amount of products used in service contracts + Waste generated	Purchases or products used in a sample of contracts	Estimation based on different reports, number of employees and building surface (except for electricity, which is the amount contracted)
Data gathering	E-government mall/shop + Online form for decentralized purchases	Reports by authorities (standard reporting form)	Reports by SWC vendors (standard reporting form)	e-Tendering platform + Interviews with contract owners	Internet search and existing studies + Data provided by the state
Definition of green and conventional	Using proxies Based on national GPP criteria	Using proxies Based on national GPP criteria	Using proxies Based on national GPP criteria	Using proxies Based on national GPP criteria	Using proxies Defined for the study
Calculation of benefits	Using own calculations	- Using own calculations - Subtracting from the actual level of GPP the baseline from year 2000	Using external calculators + own calculations	- Using own calculations - Extrapolating from a sample to all identified tenders	- Using own calculations - Applied to all existing stock and consumption
Environmental benefits reported *	CO ₂ eq emissions	CO ₂ eq emissions	- CO ₂ eq emissions - Others (energy, water and [toxic] material savings, avoided air and water emissions, etc.)	- CO ₂ eq emissions - Others (avoided air emissions and fossil raw material savings)	- CO ₂ eq emissions - Others (avoided air emissions, water and wood savings)
Socio-economic benefits reported	- Cost savings (from use costs and some externalities depending on the product) - Jobs in the green economy	None	Cost savings (lower acquisition, labour and/or use costs depending on the product)	None	Cost savings (using life-cycle costing, i.e., including acquisition, use and disposal costs)

Impact measurement of a SPP Programme: Vienna

- Impact analysis after 15 years of “*Oeko-Kauf Vienna*” (in 2014)
- Systematic analysis of procurement data and on a secondary analysis of relevant studies
- Quantitative assessments of defined impact indicators including a qualitative description of the programme impacts.
- Results for:
 - Eco-friendly working in Vienna
 - Eco-friendly building in Vienna
 - Eco-friendly living in Vienna



Green Public Procurement in the City of Vienna
Impact Analysis 30 April 2014



Impact measurement of a SPP Programme: Vienna

Figure 1: impact analysis “eco-friendly working”, source: City of Vienna

		Ecological Impact		Social Impact	Economic Impact
		savings of resources reduction of damage to the environment	savings of GWP in CO ₂ equivalents		
Eco-friendly working in Vienna	Electrical office equipment, household and commercial appliances	▶ energy savings: 630 MWh p.a. ▶ water savings: 1,500 m³ p.a. ▶ avoiding eco-unfriendly coatings	126 t p.a.	▶ Increased comfort through better performance of appliances ▶ promotion of environmentally sound behaviour of users	▶ reduction of energy and water costs: 113,000 € p.a.
	Paper, print, office supplies and office furniture	▶ 300 t office paper p.a. through double-sided printing/copying ▶ eco-friendly purchase on the basis of emission limits ▶ use of recycled products	1,060 t p.a.	▶ sustainable use of the raw material wood ▶ promotion of economical behaviour	▶ influence on supplier market (certifications required)
	Disinfection	▶ elimination of persistent substances toxic to the environment	-	▶ improved working quality and reduced sick leaves ▶ public relations through WIDES data base ▶ media campaign on awareness building, e.g. “no disinfectants in private households” (‘Nein zur Desinfektion im Haushalt’)	▶ high-quality products and yet no cost increase ▶ influence on the market by public availability of WIDES database
	Cleaning	▶ -37 % procured cleaning agents ▶ reduction of substances harmful to the environment ▶ chemical-free cleaning	-	▶ improved working quality and reduced sick leaves ▶ participation in “ÖkoRein” data base	▶ cost reduction of central purchase: 28,250 € p.a.
	Textiles	▶ reduction of chemicals in textiles	-	▶ improved working quality by reduced chemical substances in textiles ▶ socially fair procurement criteria	▶ influence on supplier market (responsibility for total supply chain)
	Vehicle Fleet	▶ reduction of air pollutants: 9 t NO_x p.a. 76 t CO p.a. 25 t NNHC p.a. 0.6 t particulate matter p.a.	-	▶ reduction of air pollutants: 113,000 of external costs p.a. ▶ improvement of air quality	▶ pioneering role in procurement
Total			1,186 t p.a.		141,250 € p.a.

Figure 2: impact analysis “eco-friendly building”, source: City of Vienna

Gràcies | Eskerrik asko | Gracias | **Thank you** | Merci | 감사

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