

**Interreg**



CENTRAL EUROPE

European Union  
European Regional  
Development Fund

**Dynamic Light**

TAKING  
**COOPERATION**  
FORWARD



Dynamic Light Conference  
Sušice, 25<sup>th</sup> - 26<sup>th</sup> April 2019



**Political and legal aspects of dynamic lighting**



Dynamic Light | University of Greifswald | José Mercado Ph.D.

# AGENDA

Introduction

Main Political  
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Main Legal  
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Strategy for DL  
integration



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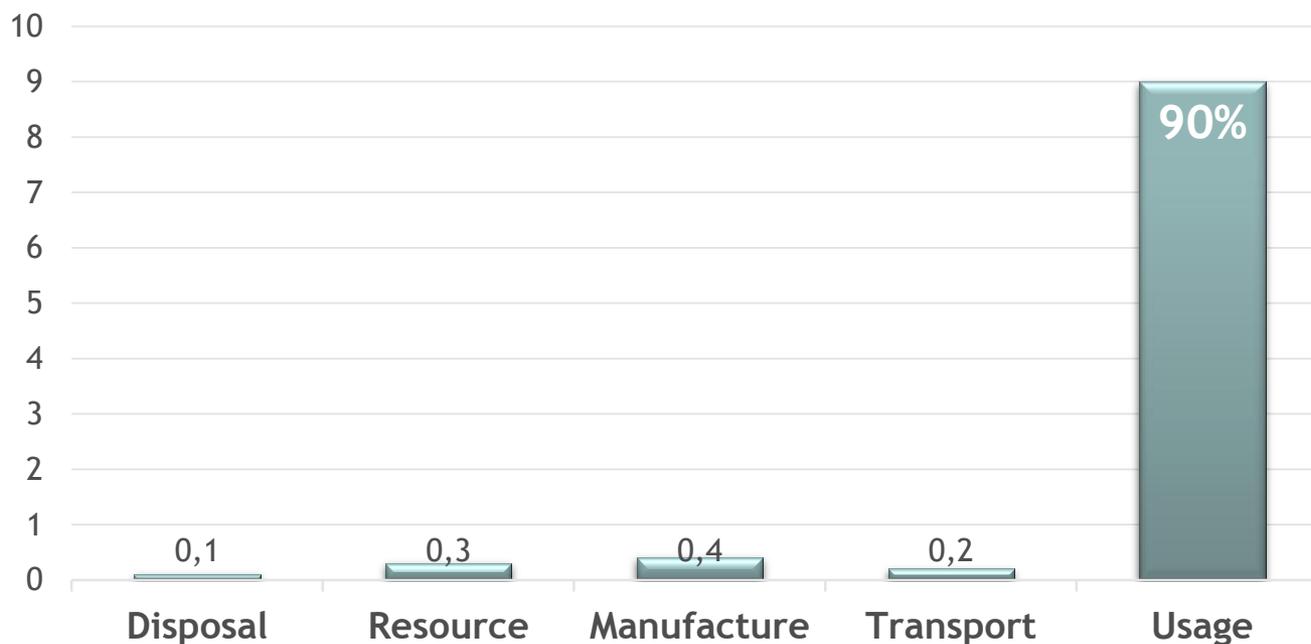
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## Public Lighting in the EU - Key environmental impacts



Source: European Lamp Companies Federation (2005)



## Public Lighting in the EU - Key environmental Impacts

### PRODUCTION PHASE

- Materials used will influence the impact in production and end of life phases
- Glass, metals, plastics, ...
- Mercury
- Maintain optimal life cycle performance and maximum energy efficiency

### END OF LIFE AND WASTE MANAGEMENT

- Recycling of the used materials
- Special facilities that have the required technology
- Managing of possible environmental impacts such as ecotoxicity

### USE PHASE

- Energy consumption
- Energy efficiency and efficacy
- Wasted light
- Obtrusive light / light pollution
- Product durability



## Public Lighting in the EU - Key figures



**30-50%**

CITY GOVERNMENTS  
SPEND OF ENERGY COSTS  
ON STREET LIGHTING



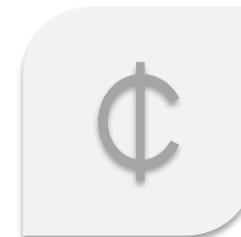
**50%**

ELECTRICITY  
CONSUMPTION IN CITIES  
IS CAUSED BY LIGHTING



**~€7.6 BN.**

LOCAL GOVERNMENTS  
SPENT ON POWERING  
PUBLIC STREET LIGHTS  
IN 2015



**70% (~€5.3 BN.)**

POTENTIAL SAVINGS BY  
STREET LIGHTING  
RETROFIT



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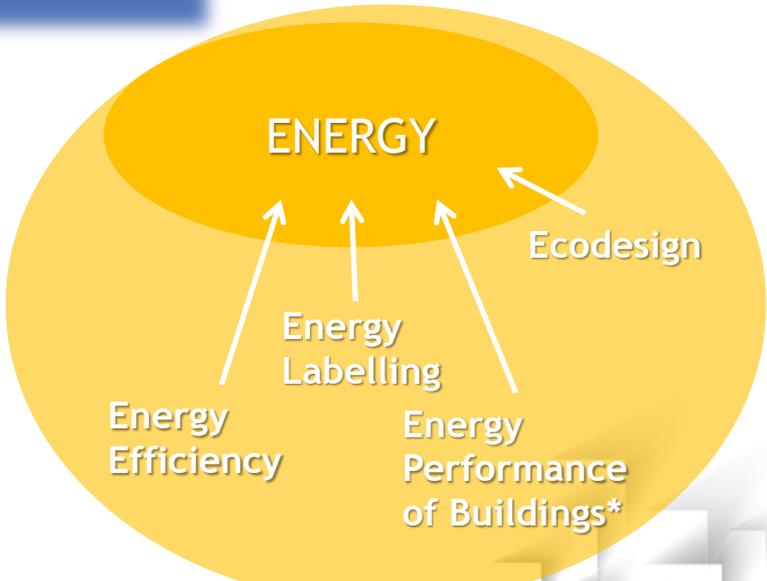
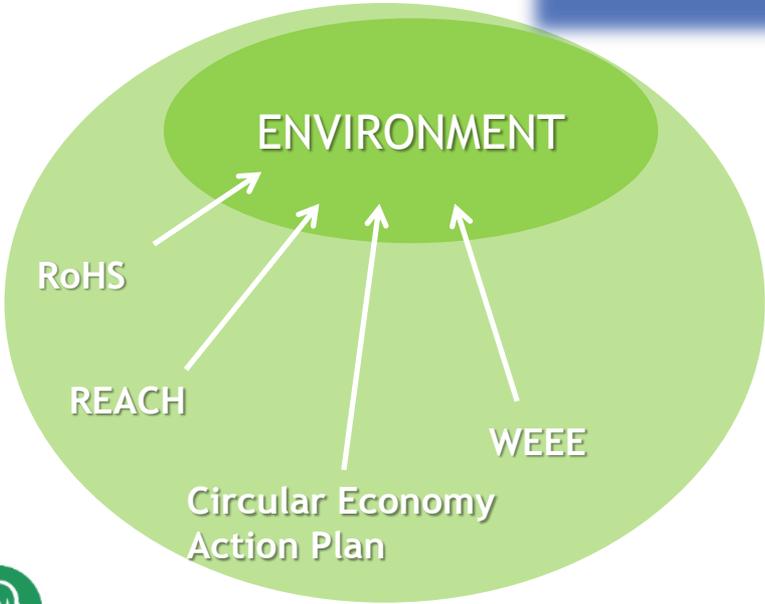
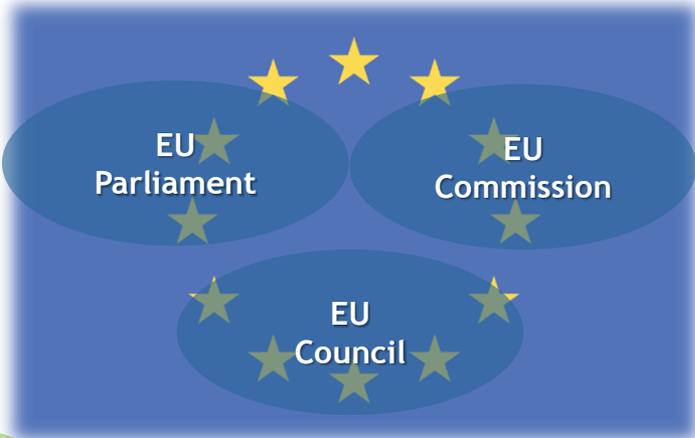
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# EU - POLICY FRAMEWORK



# LEDIFICATION

**RecOlight**  
WEEE? GOT IT.

## evolution of LEDs in EEE & WEEE

**2002**  
Introduction of EU WEEE Directive

**2007**  
Directive transposed into UK WEEE Regulations - It was all about fluorescent lamps

**2010**  
Integrated LED luminaire start to appear – retail sector and hospitality early adopters

**2012**  
LEDs included in scope of recast WEEE directive

**2014**  
LED is a huge lighting industry success story! Start of mass change over to LED street lighting, and LED in other sectors

**2016**  
EucoLight members start working with recyclers to find better separation & treatment methods

Concerns over online LED producer freeriders EucoLight & members begin to take action

Market widens with influx of new LED producers

LEDs in waste stream estimated at 0.1%

EucoLight began research into component of LEDs and how this could affect recycling targets

## 2017

More work needed to separate LEDs and GDLs – further Research initiated

EucoLight data shows that LED recycling has some challenges due to the diversity of materials used, and product designs

EucoLight host online freeriding forum with WEEE Forum & Expra, focused on non-compliant LED sales

Co collection of LEDs with GDLs - EucoLight survey reveals that end users struggle to differentiate between GDL & LED

The EU Circular Economy Package recommends standards on recyclability of products

## 2018 & BEYOND

LEDs in waste stream estimated at 1-2%  
Research carried out with recyclers by EucoLight members

EucoLight acts on the challenge of recycling LEDs - Research projects initiated by working groups

- identification of efficient sorting and recycling technologies
- potential challenges in LED strategic material recovery

Recycling rate: first estimates show a low rate, far away from target

Source: <https://www.recolight.co.uk/resource-centre/>

## Political Strategies and Targets

- In its Energy 2020 strategy (2010) the European Commission (EC) stated:
  - *“Energy efficiency is the most **cost-effective** way to reduce emissions, improve energy security and competitiveness, make energy consumption more affordable for consumers as well as create employment, including in export industries”.*
- The Energy Efficiency Directive (EED) 2012/27/EU is the most relevant step towards the achievement of the Europe 2020 strategy for *“**smart, sustainable and inclusive growth**”*, within which the promotion of energy efficiency was planned. EED identifies energy efficiency as a major element in **ensuring the sustainability of the use of energy resources and sets the 20/20/20 targets by 2020**. Urban and street lighting systems are also subject to meet energy efficiency targets; therefore, the actions and plans in each Country are derived from/or in line with the EED.
- Under the EED, each Member State elaborate **National Energy Efficiency Action Plans (NEEAPs)**, like Germany in 2014, or some years later, like Poland in 2016. Moreover, the implementation period of the NEEAPs vary amongst the MS varies from country to country; i.e. Germany sets targets until 2020 while Croatia considers the period 2014-2016. In either case, MS implemented monitoring instruments that are reported on yearly basis.



## Main Actors and Stakeholders

	DE	SL	IT	PL	HR	CZ
Economy	X	X	X			
Energy	X		X	X	X	
Environment	X	X	X	X	X	
Buildings	X					
Nuclear Safety	X					
Nature Conservation	X					
Transport	X		X			
Digital Infrastructure	X					
Urban Development/Spatial Planning	X	X		X		
Infrastructure		X				
Finance		X	X	X		
Industry & Trade						X

Source: own elaboration



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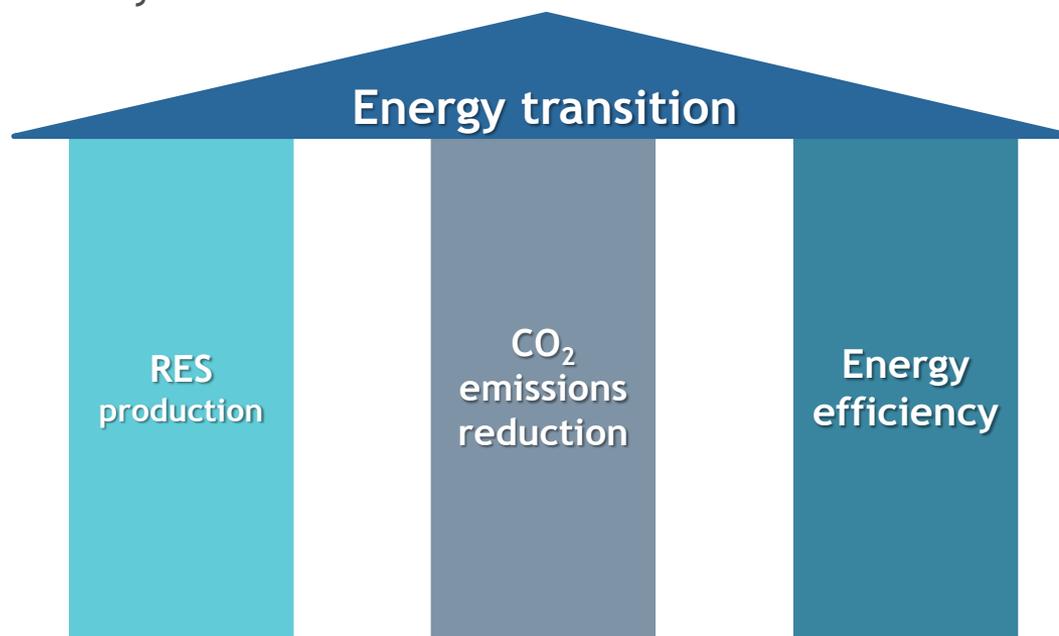
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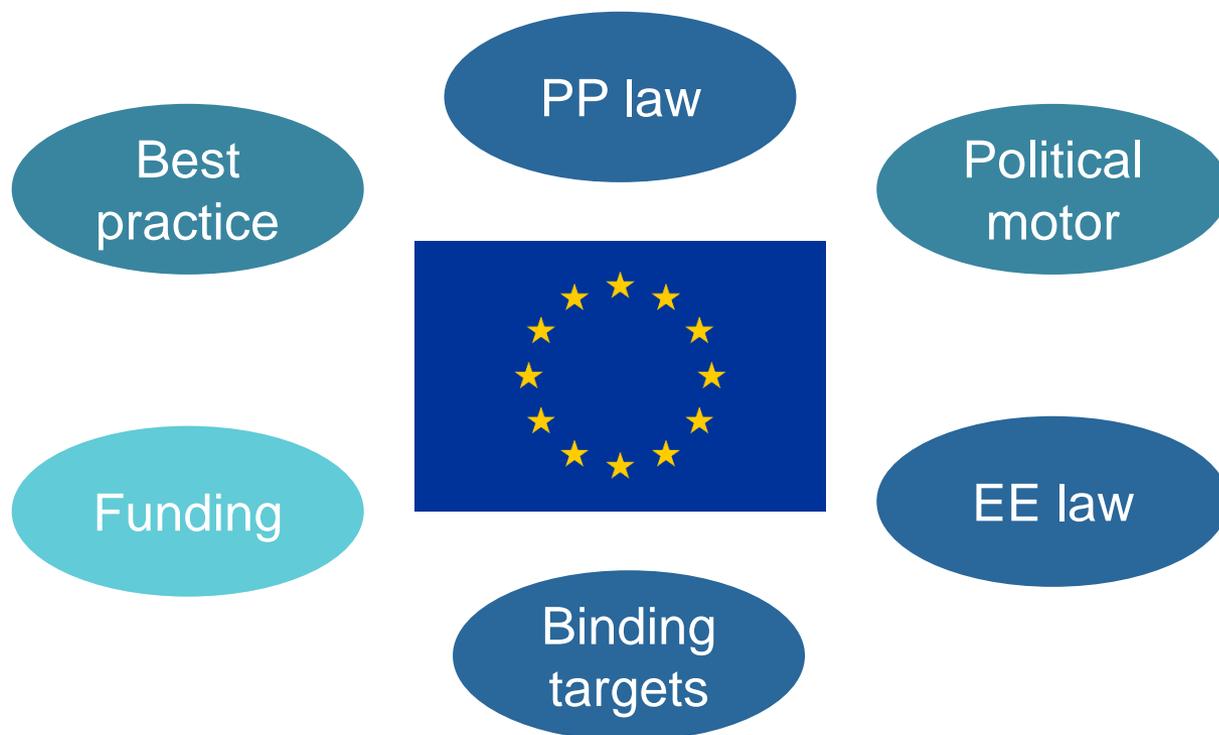


## The energy transition in the EU

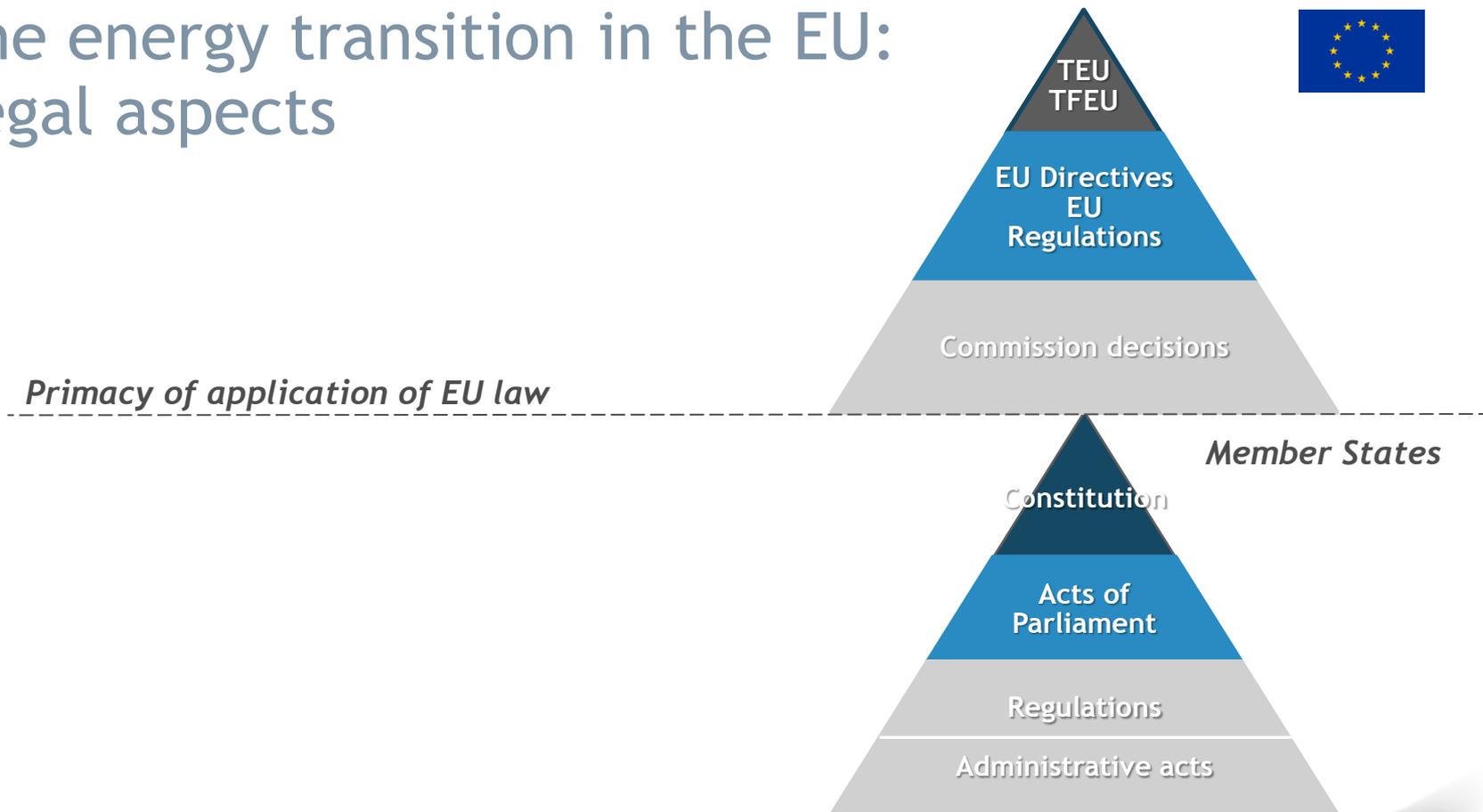
Why energy efficiency?



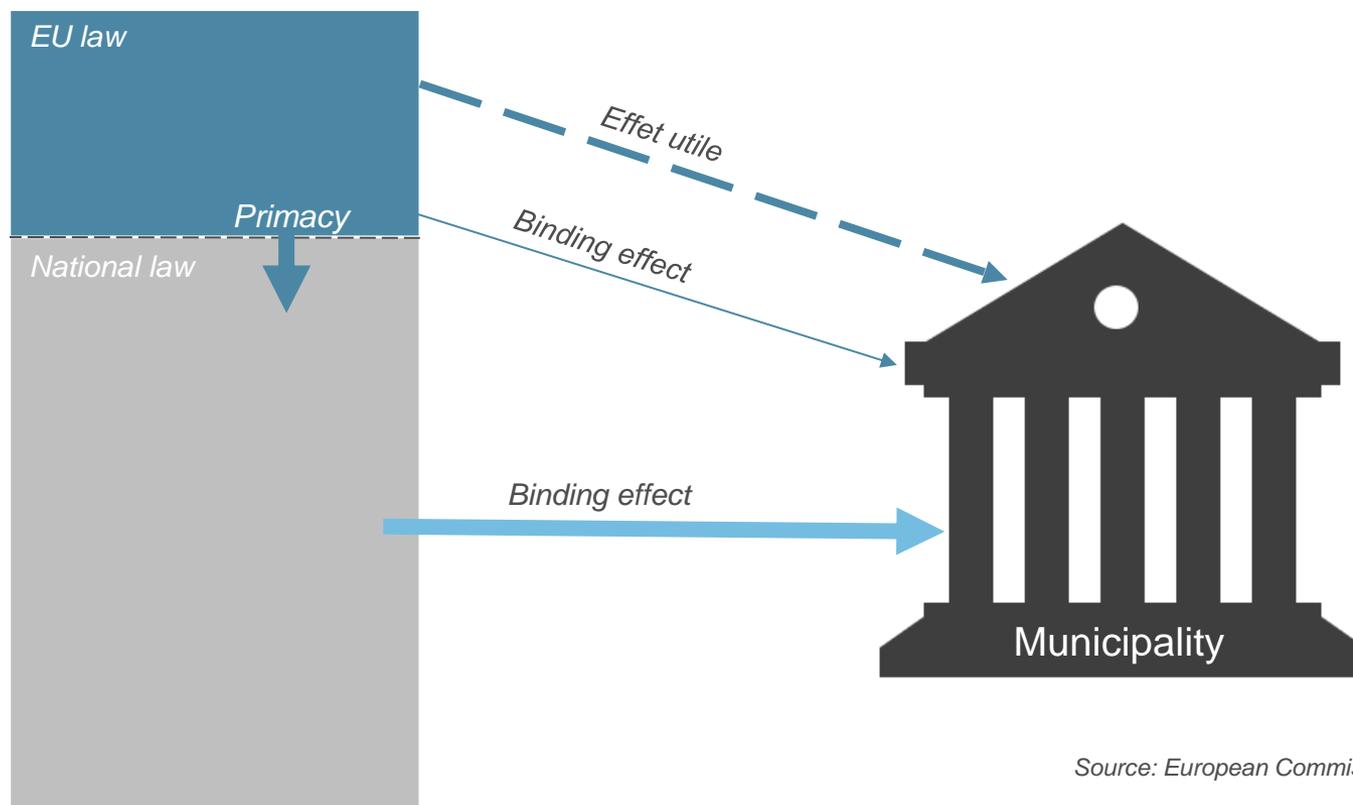
## Energy efficiency improvements: the role of the EU



## The energy transition in the EU: Legal aspects



## The energy transition in the EU: Legal aspects



Source: European Commission



- The EU Clean Energy Package:
  - Proposals of the EU Commission for an **extensive reform of EU energy law**
  - Issued end of 2016
  - Entry into force: scheduled early 2019
  - Motto: *energy efficiency first*

	European Commission Proposal	EU Inter-institutional Negotiations	European Parliament Adoption	Council Adoption	Official Journal Publication
Energy Performance in Buildings	30/11/2016	Political Agreement ...	17/04/2018	14/05/2018	19/06/2018 - Directive (EU) 2018/844
Renewable Energy	30/11/2016	Political Agreement	Committee approval	-	-
Energy Efficiency	30/11/2016	Political Agreement	Committee approval	-	-
Governance	30/11/2016	Political Agreement	Committee approval	-	-
Electricity Regulation	30/11/2016	Ongoing	-	-	-
Electricity Directive	30/11/2016	Ongoing	-	-	-
Risk Preparedness	30/11/2016	Ongoing	-	-	-
ACER	30/11/2016	Ongoing	-	-	-

Source: European Commission



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EU - EE LAW



- Particular field of energy law
  - Contains political / unbinding targets, but also binding objectives!
  - Directives transposed into national law
- **Energy Efficiency Directive**, **Energy Performance in Buildings Directive**
- **Energy Labelling** and **Ecodesign** Directives and their implementation regulations
  - Energy labelling of electrical lamps and luminaires (874/2012)
  - Ecodesign requirements for directional lamps, light emitting diode lamps and related equipment (1194/2012)
  - Ecodesign requirements for fluorescent lamps without integrated ballast, for high intensity discharge lamps, and for ballasts and luminaires able to operate such lamps (245/2009)



- Art. 6 Energy Efficiency Directive (2012/27/EU): **Purchasing by public bodies**

*Member States ensure that central governments purchase only products, services and buildings with high energy-efficiency performance, insofar as that is consistent with cost-effectiveness, economical feasibility, wider sustainability, technical suitability, as well as sufficient competition*  
→ **Obligation** applies to contracts **above** the respective PP thresholds

*Member States encourage public bodies, including at regional and local levels to follow this example and purchase only products, services and buildings with high energy-efficiency performance; public bodies should be encouraged, when tendering service contracts with significant energy content, to assess the possibility of concluding long- term energy performance contracts that provide long-term energy savings*



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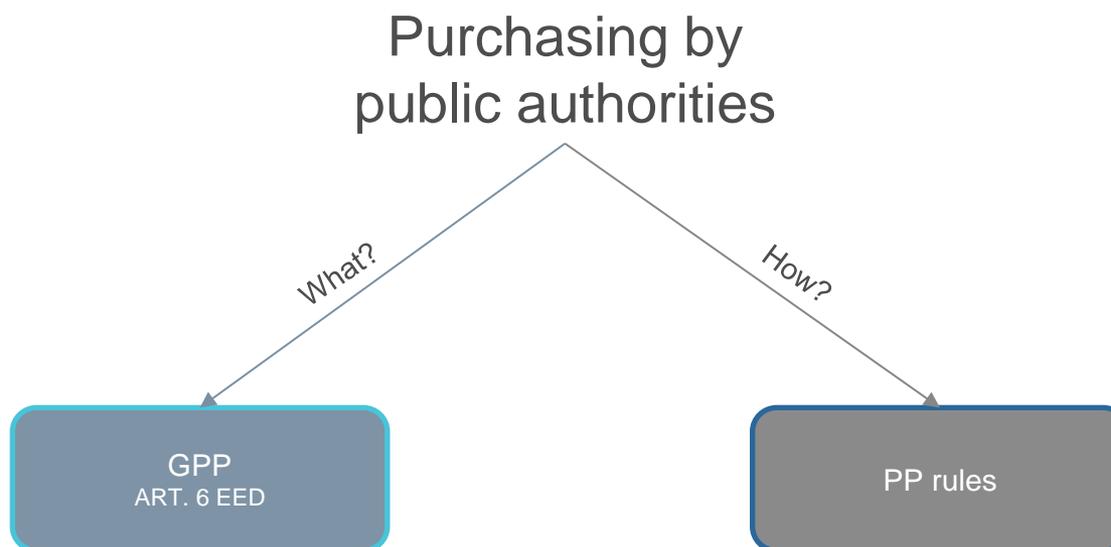
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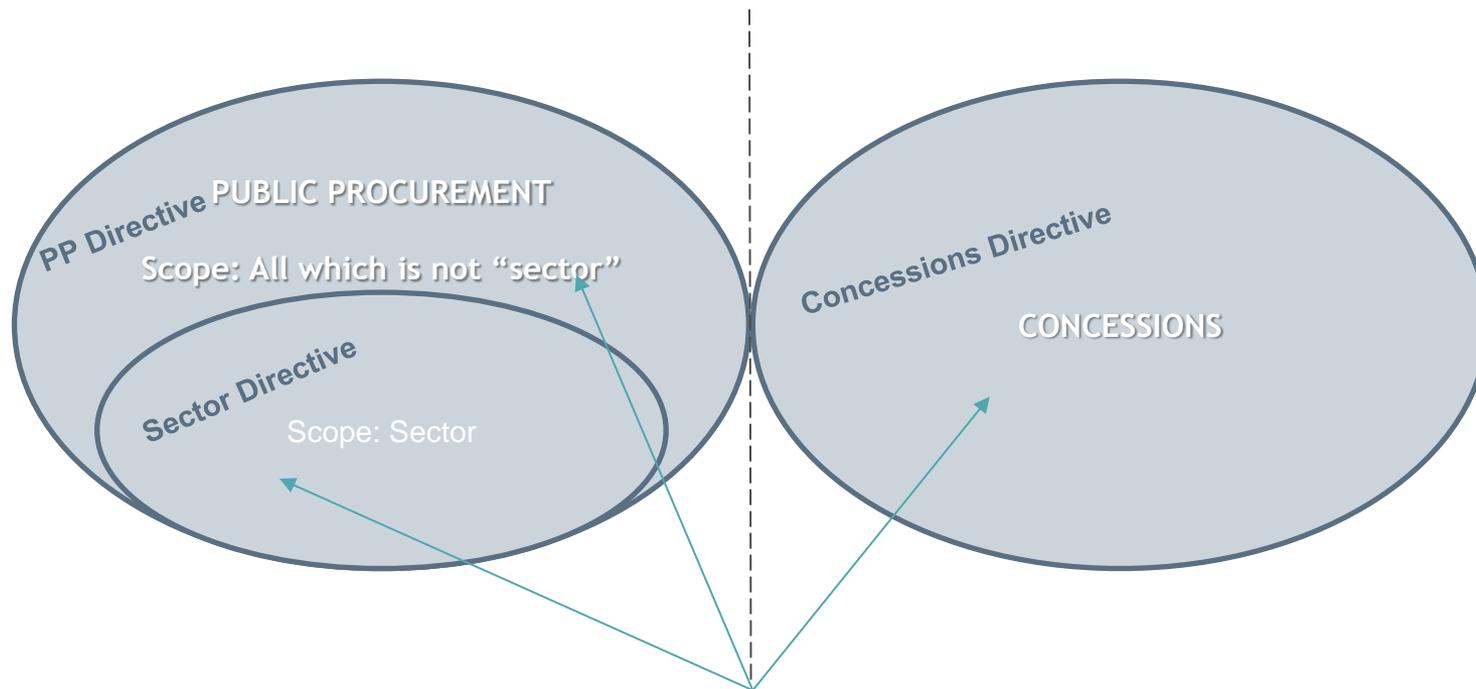
EU - PP LAW





- EU law sets out minimum harmonised public procurement rules:
  - **Concessions Directive:** Directive 23/2014/EU on the award of concession contracts
  - **PP Directive:** Directive 24/2014 /EU on public procurement
  - **Sector Directive:** Directive 25/2014/EU on procurement by entities operating in the water, energy, transport and postal services sectors
- Directives: not directly applicable in the Member States
  - Must be transposed into national law!





- The scopes of application are mutually exclusive
- i.e.: to each case is only one Directive applicable!



- Public procurement: *contract for pecuniary interest [...] having as its object the execution of works, the supply of products or the provision of services*

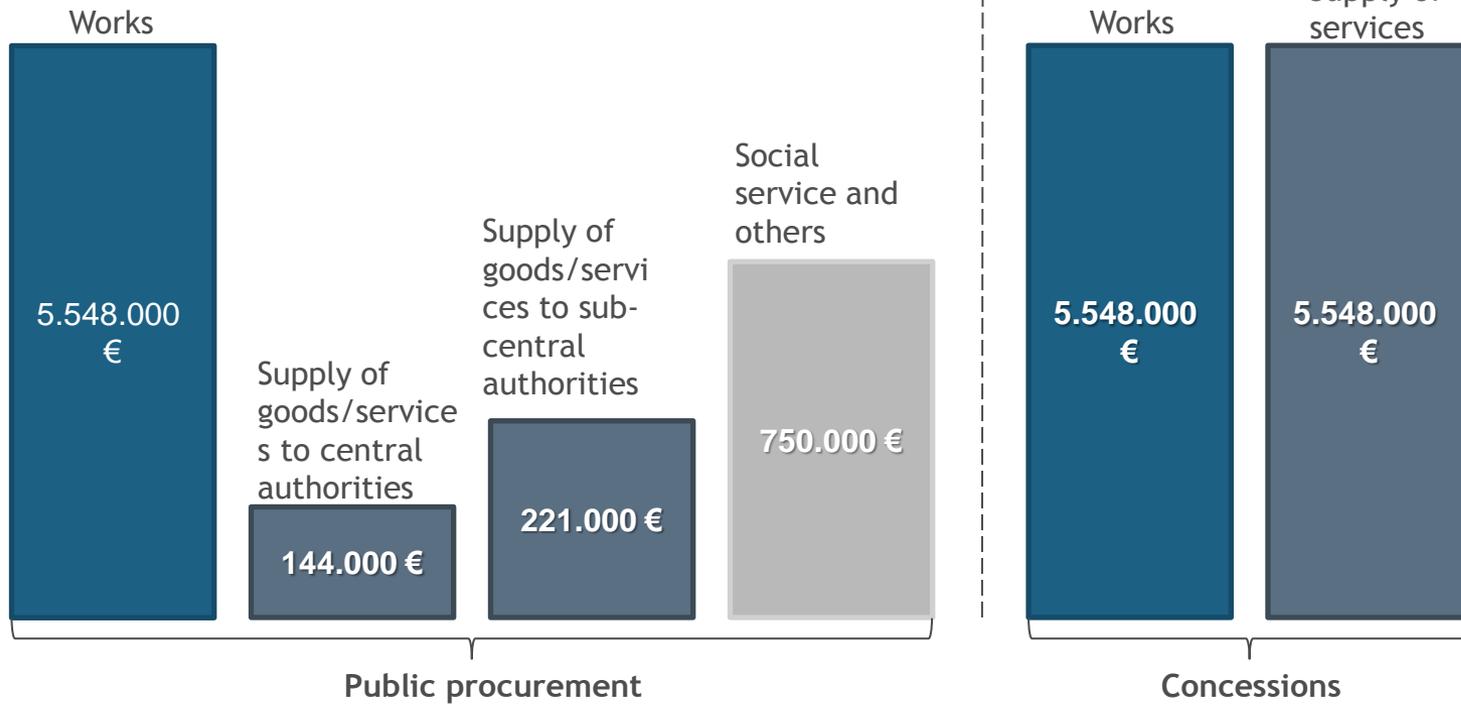
- Concession: *contract for pecuniary interest by means of which a contracting authority entrusts the execution of work or the provision and the management of services to one or more economic operator the consideration for which consists either solely in the right to exploit the work or the service that are the subject of the contract or in that right together with payment*



- Contract types: “public contracts having as their object...”
  - **Works:** design/realisation/or execution of works (for example building construction or restoration)
    - For example: “installation of illumination systems for roads”
  - **Supply of goods:** purchase, lease, rental or hire-purchase, with or without an option to buy, of products
  - **Supply of services:** provision of services other than those referred to in the work contract definition
- Also possible: **mixed contracts:** public contracts which objects contain elements of several of the contract types above



Thresholds:



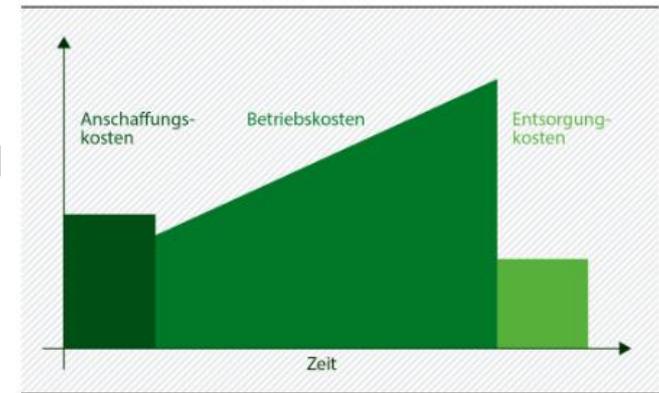
## Awarding procedure

- **Contracts above thresholds:** ordinary procedure as transposed from Directives
- **Contracts below thresholds:** falls outside the scope of EU Directives
  - **National law applies, general principles of EU law must be respected:**
    - No discrimination against companies from other EU countries/tender information must be made available to all interested companies
    - No reference to specific brands, trademarks or patents in the tender description
    - No refusal of supporting documents (certificates, diplomas, etc. providing the same level of guarantee) issued by other EU countries



## Awarding procedure

- Award criterion: most economically advantageous offer, cf. PP/Concessions Directives
- Cost-effectiveness approach, e.g. life-cycle costing (LLC), taking into account:
  - Purchase price and end-of-life costs
  - Operating costs, including energy, fuel and water use, spares and maintenance
  - Costs of environmental externalities during life cycle (e.g.: cost of GHG or other pollutant emissions, climate change mitigation costs)



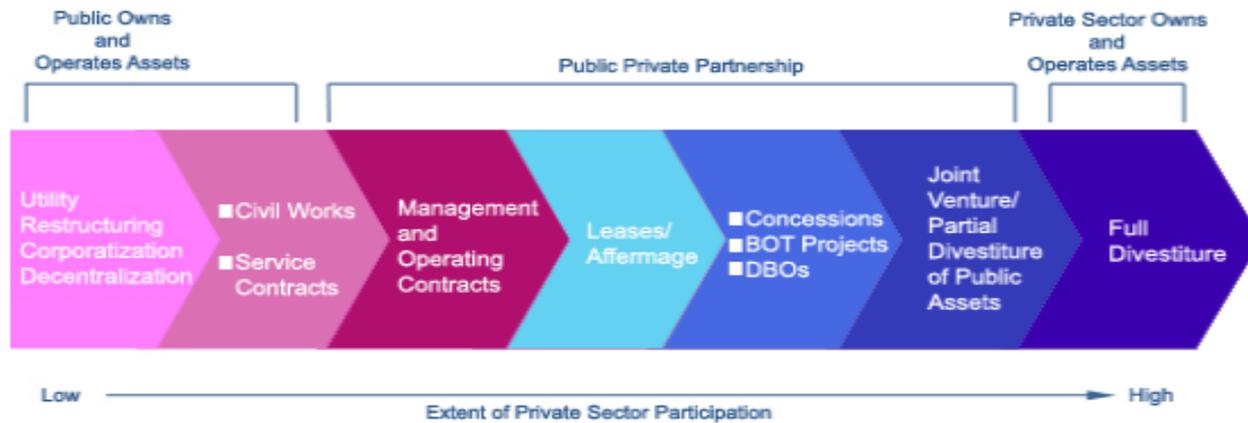
Umweltbundesamt

Source: Umweltbundesamt



## Contracting

- Contract design: no specific rules set by EU law
  - Detailed provision established by national legislation!
  - Example: public-private partnership (PPP)



Source: Public-private partnership legal resource center (PPPLRC)



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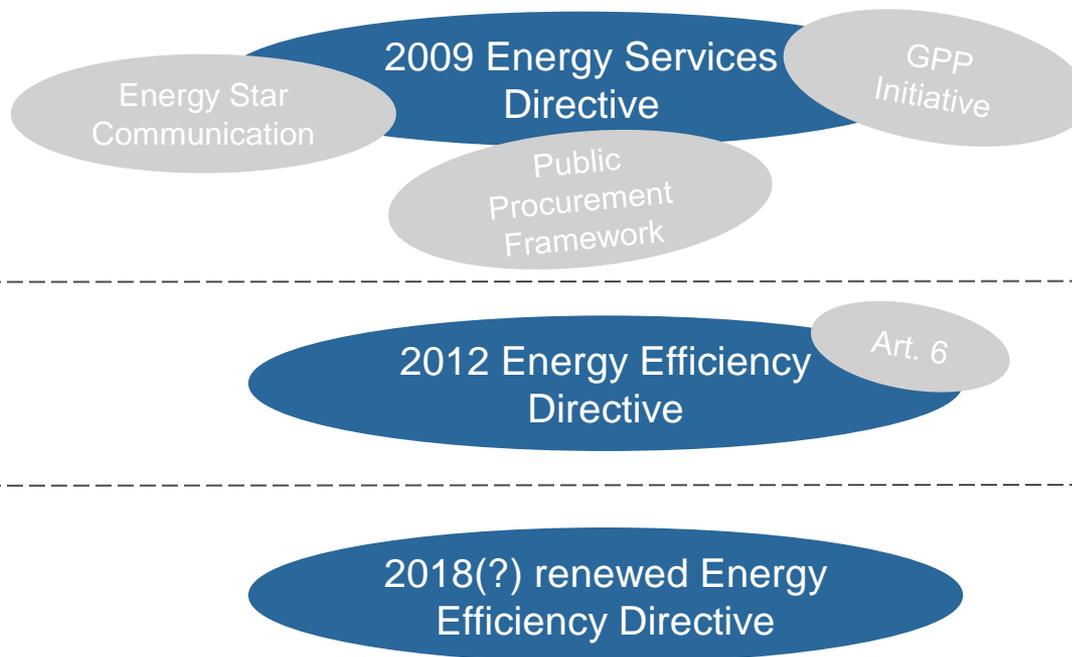
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EU - GPP LAW



## Evolution of the framework for Green PP:



- Communication of the Commission 400/2008 on Green Public Procurement (GPP)
  - Definition: *“Process whereby public authorities seek to procure goods, services and works with a reduced environmental impact throughout their life cycle when compared to goods, services and works with the same primary function that would otherwise be procured”*
  - GPP Communication is the “ancestor” of Art. 6 EED and still relevant!
- Member States encouraged to publish National Action Plans outlining actions and measures for green or sustainable PP



- GPP criteria: environmental procurement criteria developed for assisting contracting authorities in identifying and procuring greener products, services and works
  - The EU established **GPP criteria** for 21 products and service groups, among which “**Street Lighting and Traffic Lights**”<sup>1</sup> which can be used directly in tender documents
  - GPP criteria sets also developed by Member States, for example Italy
  - Use of **labels** as part of technical specifications (Ecolabel, EU energy label...)
- Awarding of GPP: environmental/technical criteria as minimum requirement (**specification**) OR as a preference/% of the criteria reserved for energy efficiency (**award criterion**)

<sup>1</sup> [http://ec.europa.eu/environment/gpp/pdf/criteria/street\\_lighting.pdf](http://ec.europa.eu/environment/gpp/pdf/criteria/street_lighting.pdf)



- Practical implementation of Art. 6 EED via concrete support mechanisms
  - Provision of criteria documents (minimum requirements, award criteria for groups of products...)
  - Provision of specific advice (handbooks, guidelines...)
  - Provision of specific methodologies (e.g. life cycle costing)
- Commission study: **provision of specific methodologies** has the highest added value
- But: level and quality of these measures differed among Member States
  - Need for harmonised tools from the EU?



## Evolution of the framework for Green PP:

- Issue: reluctant attitudes in the local administration/contracting authority towards changes in the tendering process
- Solutions:
  - Raise awareness; provide explanations as to the advantages of green solutions
  - Reduce administrative burden through framework agreements (one tendering for several contracts)
- Issue: lack of technical know-how and experience with dynamic lighting projects/GPP
- Solutions:
  - Support from dedicated authorities such as national/regional energy agencies
  - Joint procurement: shared skills and knowledge among authorities!



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Transposition into  
national law



- National transpositions of Art. 6 EED on purchasing by public bodies

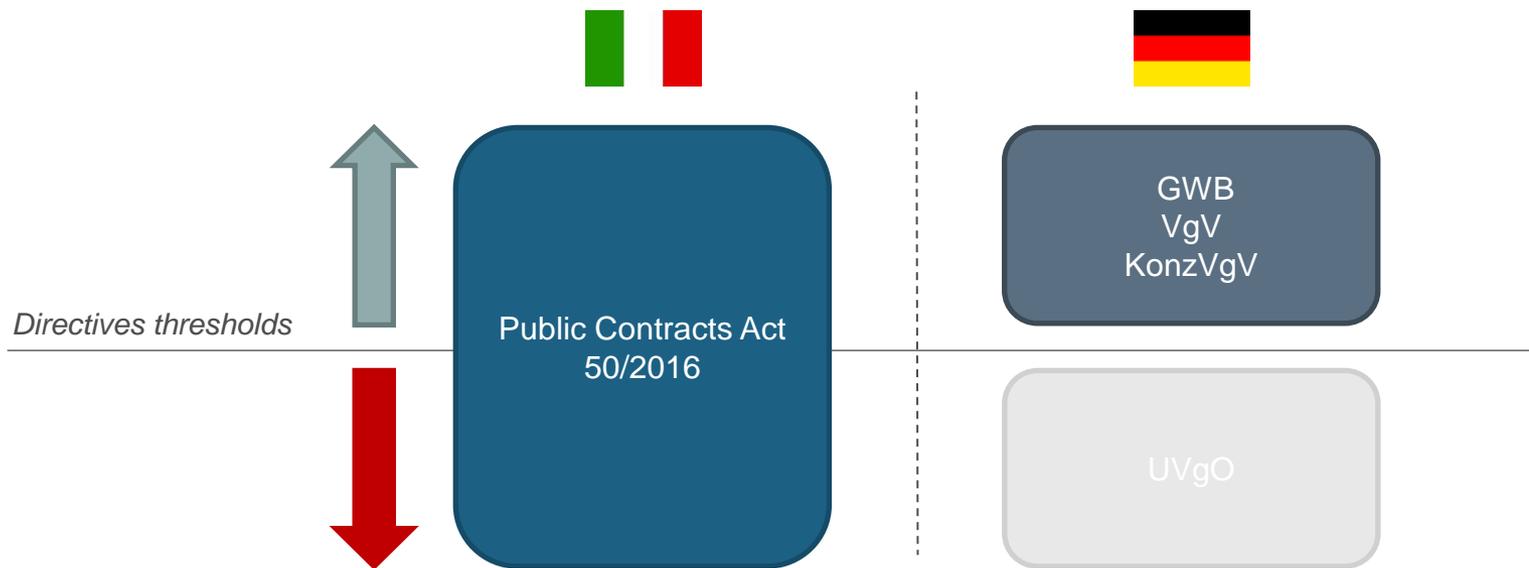
Form of transposition	Partner countries
Countries with <b>direct transposition</b>	Croatia, Italy, Poland (specific efficiency laws)
Countries with implementation plus additional national rules	Austria, Czech Republic (procurement and energy efficiency legislation) Slovenia (public procurement legislation)
Other countries	Germany (pre-existing law)

Source: EUR-Lex

- Crucial is the **local level!**
  - Recommendation of the EU Parliament of 2015: importance of “exploiting the **potential of local energy savings** much more, **as local and regional authorities are central** in driving forward energy efficiency and, overall, the energy transition”



## Example cases: Germany and Italy



## Example case: Germany



- PP Directive transposed by Part 4 of the Act against Restraints on Competition (GWB)
  - Concretised by the 2016 Ordinance on the Award of Public Contracts (VgV), which sets detailed rules on the awarding procedure
  - Below EU thresholds: national budgetary law applies (UVgO)
- Concessions Directive transposed by the Concession Grant Regulation (KonzVgV)
- For both PP and concessions procedure: principles of economic efficiency and proportionality



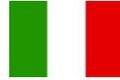
- § 97 III GWB: environment-related aspects must be taken into account
- § 67 VgV on the supply of energy-related goods or services:
  - Tender documents must require the highest level of energy efficiency
  - Tenderers must provide concrete information regarding energy consumption
    - Where appropriate also: LLC analysis
  - Energy efficiency must be adequately regarded as an award criterion
- § 15 II KonzVO: tender documents may mention environment-related requirements



- GPP: not anchored in statutory law
  - Internal administrative organisation necessary!
    - Commitment from regional government, mayor's office, public authority...
    - Through non-binding instruments: administrative guidelines and provisions
    - Concrete criteria: tender guidelines of UBA, environmental labels (Blauer Engel)
    - Guidance at Federal level, for example "*Leitfäden zur Planung und Beschaffung: LED-Beleuchtung im Innen- und Außenbereich*"<sup>1</sup>
  - Länder law also relevant, for example § 7 Berliner Ausschreibungs- und Vergabegesetz (BerlAVG) on GPP: use of ecological criteria / LLC
    - Concretised by the Verwaltungsvorschrift Beschaffung und Umwelt (VwVBU)
- <sup>1</sup> [http://www.nachhaltige-beschaffung.info/SharedDocs/Kurzmeldungen/DE/2018/181025\\_LED\\_Innen\\_Aussenbeleuchtung\\_LF.html?nn=3631298](http://www.nachhaltige-beschaffung.info/SharedDocs/Kurzmeldungen/DE/2018/181025_LED_Innen_Aussenbeleuchtung_LF.html?nn=3631298)

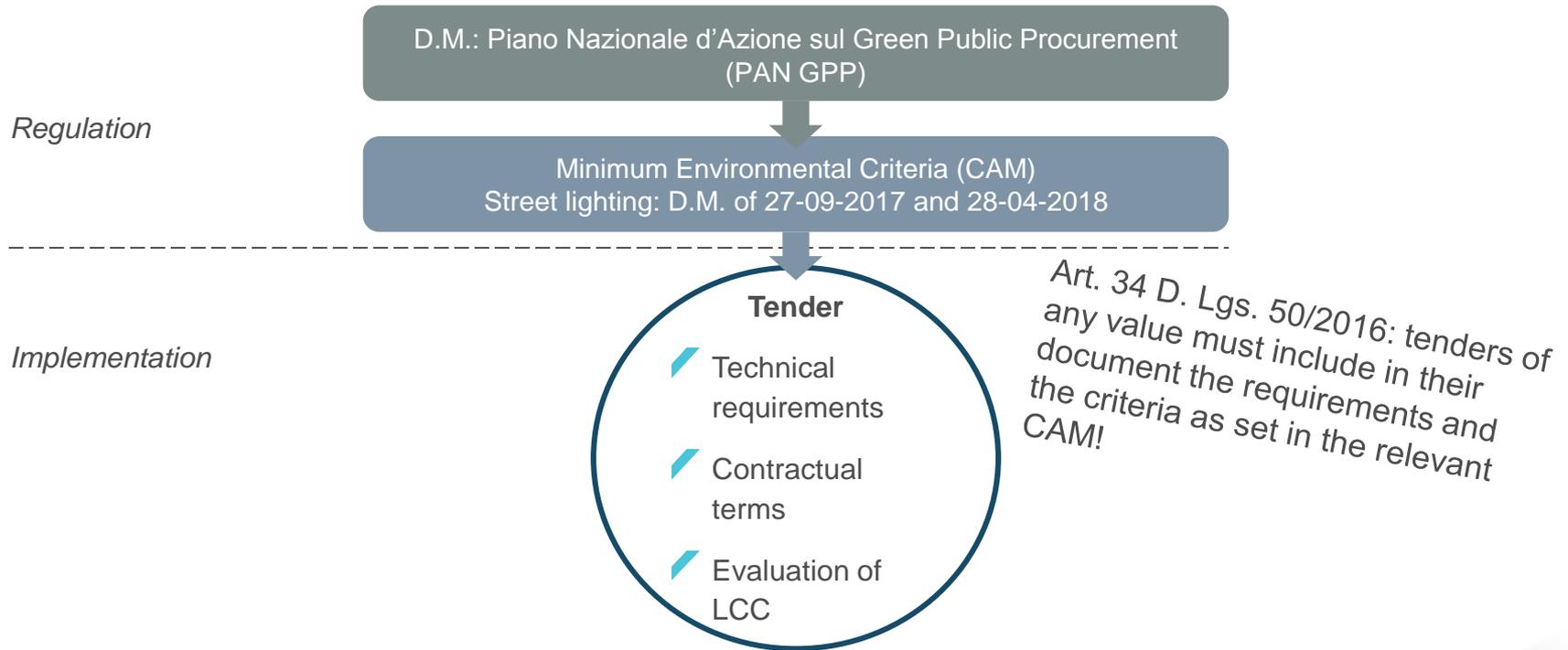


## Example case: Italy



- EU Directives transposed by the **Public Contracts Act** (Decreto Legislativo n. 50/2016)
  - → Completed and partially corrected by legislative decree n. 56/2017
- The Act regulates all public contracts (**both PP and concession**)
  - Public contracts as “procurement or concession contracts for the purchase of services or supplies, or for the execution of works or projects”
  - Rules are also set for public contracts **below European thresholds**
- Art. 34 D. Lgs. 50/2016: **minimum environmental criteria** mandatory





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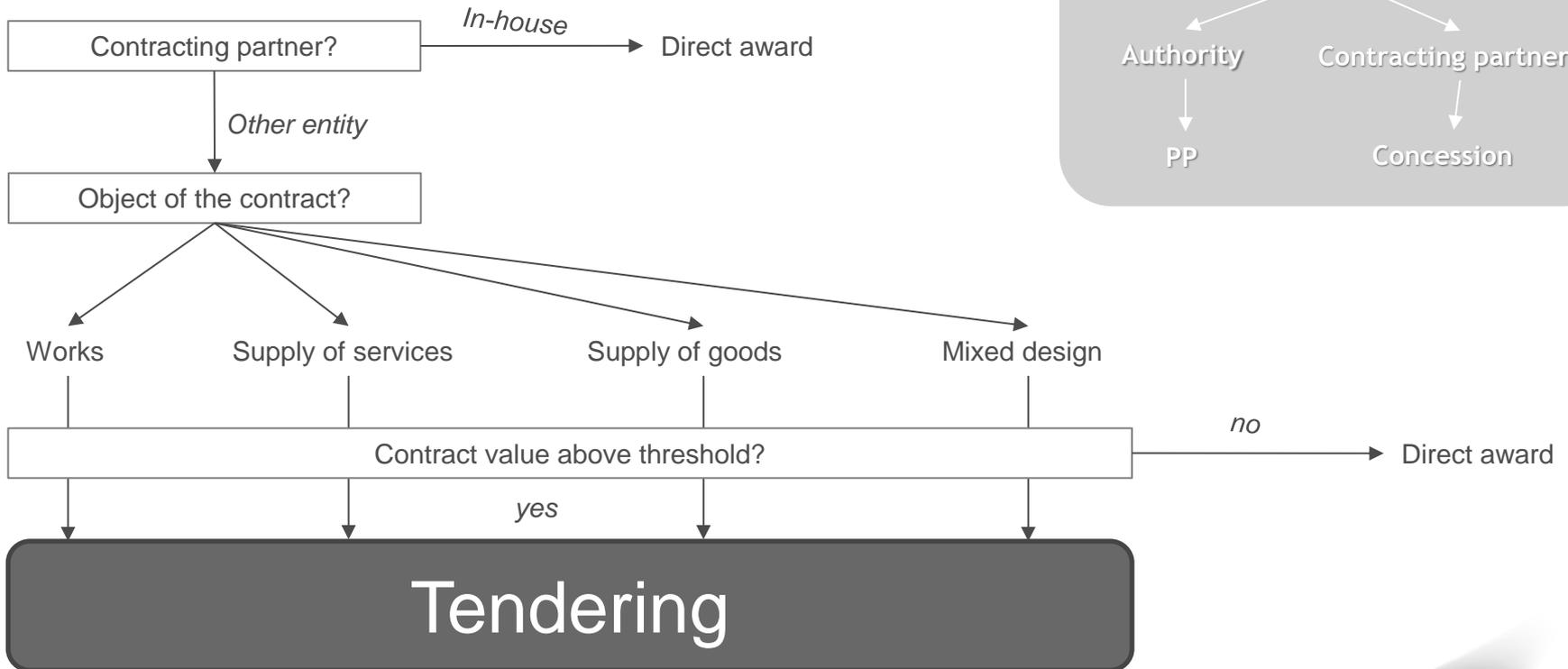
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# STRATEGY FOR DL INTEGRATION



## HOW TO PROCURE DYNAMIC LIGHTING PROJECTS A PRACTICAL GUIDELINE

Deliverable D.T4.2.3: "Strategy to facilitate the integration of dynamic lighting from a legal perspective"

Version 1  
12 2018

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Thank you for your attention!

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