ENERGY EFFICIENCY

Energy Efficiency Governance in the Buildings Sector

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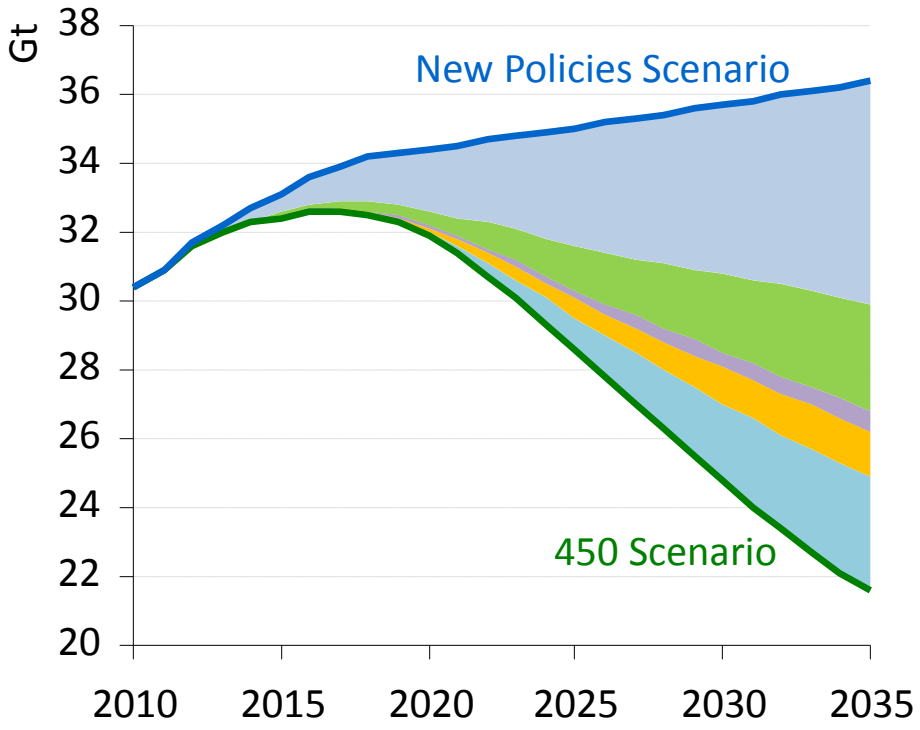
Outline

- Energy efficiency policy and climate change mitigation
- Barriers to buildings energy efficiency
- Policies promoting buildings energy efficiency
- Delivery frameworks for buildings efficiency policies

Efficiency gains can contribute most to emissions reductions

WORLD ENERGY OUTLOOK 2011

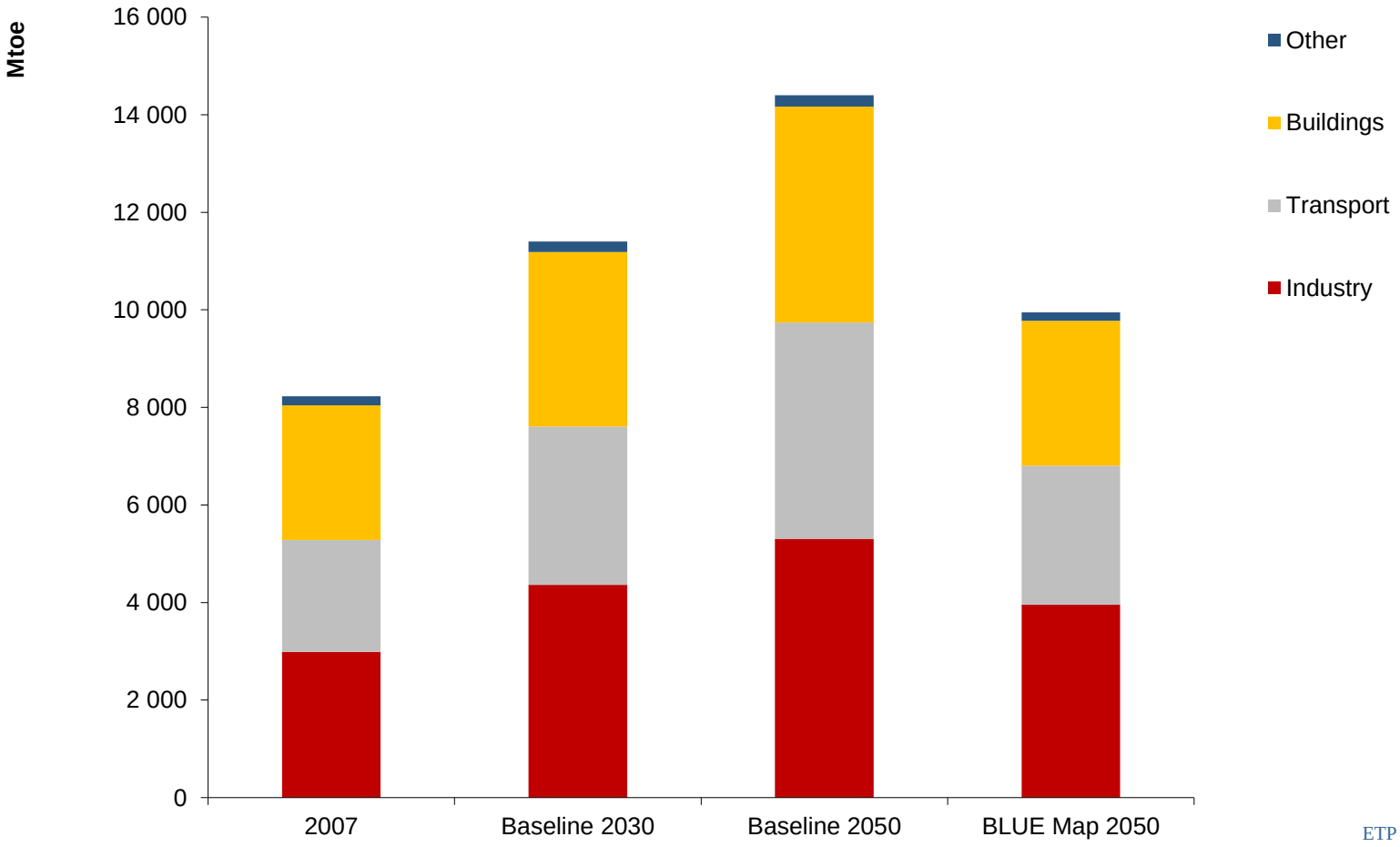
World energy-related CO_2 emissions abatement in the 450 Scenario relative to the New Policies Scenario



	Abatement	
	2020	2035
Efficiency	72%	44%
Renewables	17%	21%
Biofuels	2%	4%
Nuclear	5%	9%
CCS	3%	22%
Total (Gt CO_2)	2.5	14.8

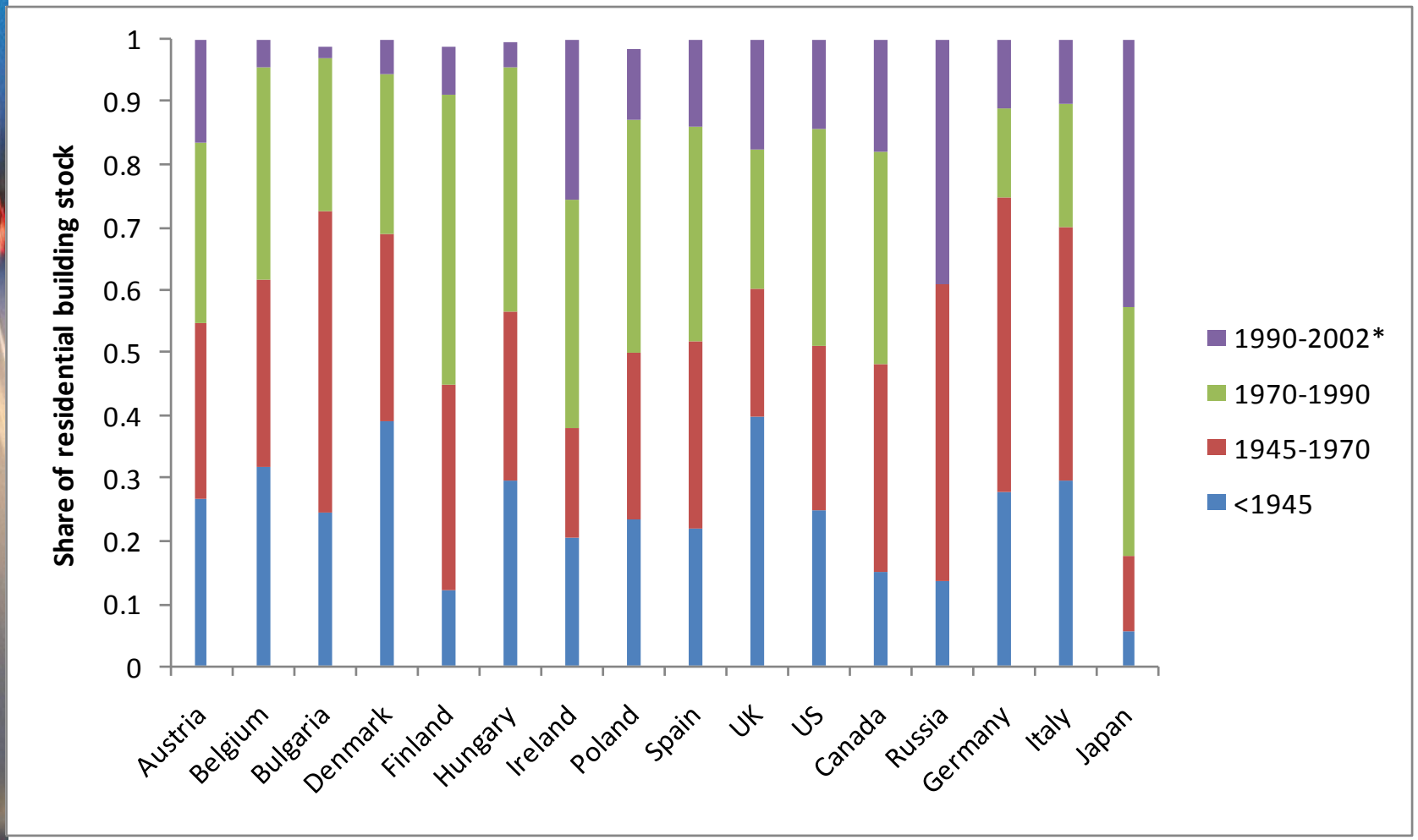
Energy efficiency measures – driven by strong policy action across all sectors – account for 50% of the cumulative CO_2 abatement over the Outlook period

Buildings sector share of final energy consumption – 2007, 2030 and 2050



ETP 2010

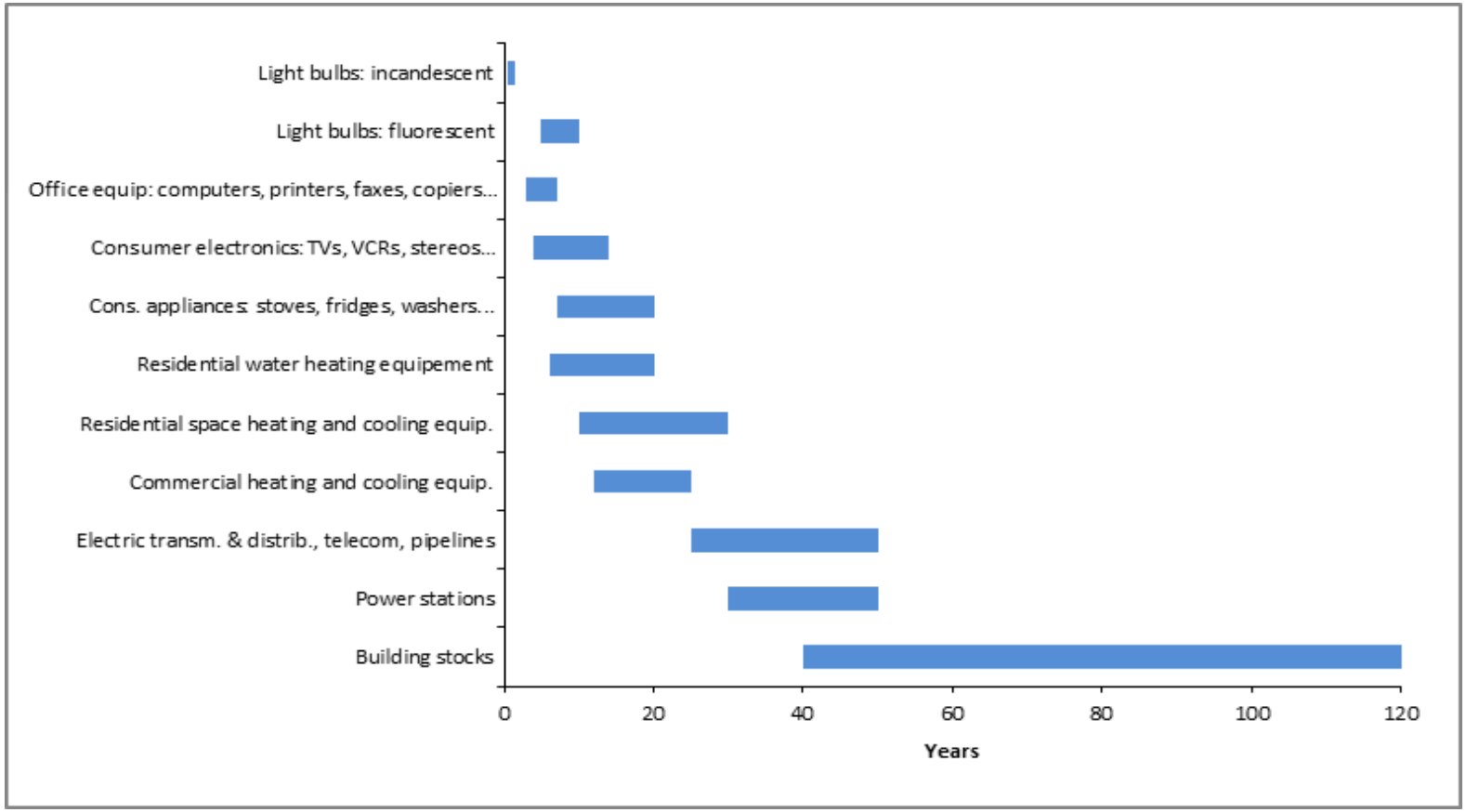
Share of residential building stock in selected countries by vintage



Energy efficiency in buildings – key data IEA countries

- 32% global final energy consumed in buildings
- 2/3:1/3 split between residential:commercial buildings
- Approx 50% buildings in IEA countries pre-building codes
- Average energy consumption ~ 230kWh per m2
- EU 2020 target for new buildings - 50 kWh/m2/yr
- New buildings share low - < 2%; renovation of existing buildings < 1%/yr
- Target for building stock – 50kWh/m2/yr by 2050? Not all buildings will make it!

Where should we start?



Based on Philibert and Pershing 2002, ETP 2010

Barriers to buildings energy efficiency

Barrier	Examples
Market	• Market and price distortions (externalities) • The principal agent or split incentives problem, in which the investor does not reap the rewards of improved efficiency • Transaction costs (project development costs are higher)
Financial	• Lack of understanding of the benefits of efficiency investments • Long payback periods • Technical and market risk perception by lenders
Information	• Lack of sufficient information, especially on new technologies (ZEBs)
Regulatory and institutional	• Complexities in the buildings supply chain • Countervailing incentives (e.g., speed of project development) • Diffuseness of buildings owners
Technical	• Lack of affordable or suitable buildings technology & materials • Insufficient local capacities for identifying, developing, implementing and maintaining efficiency investments

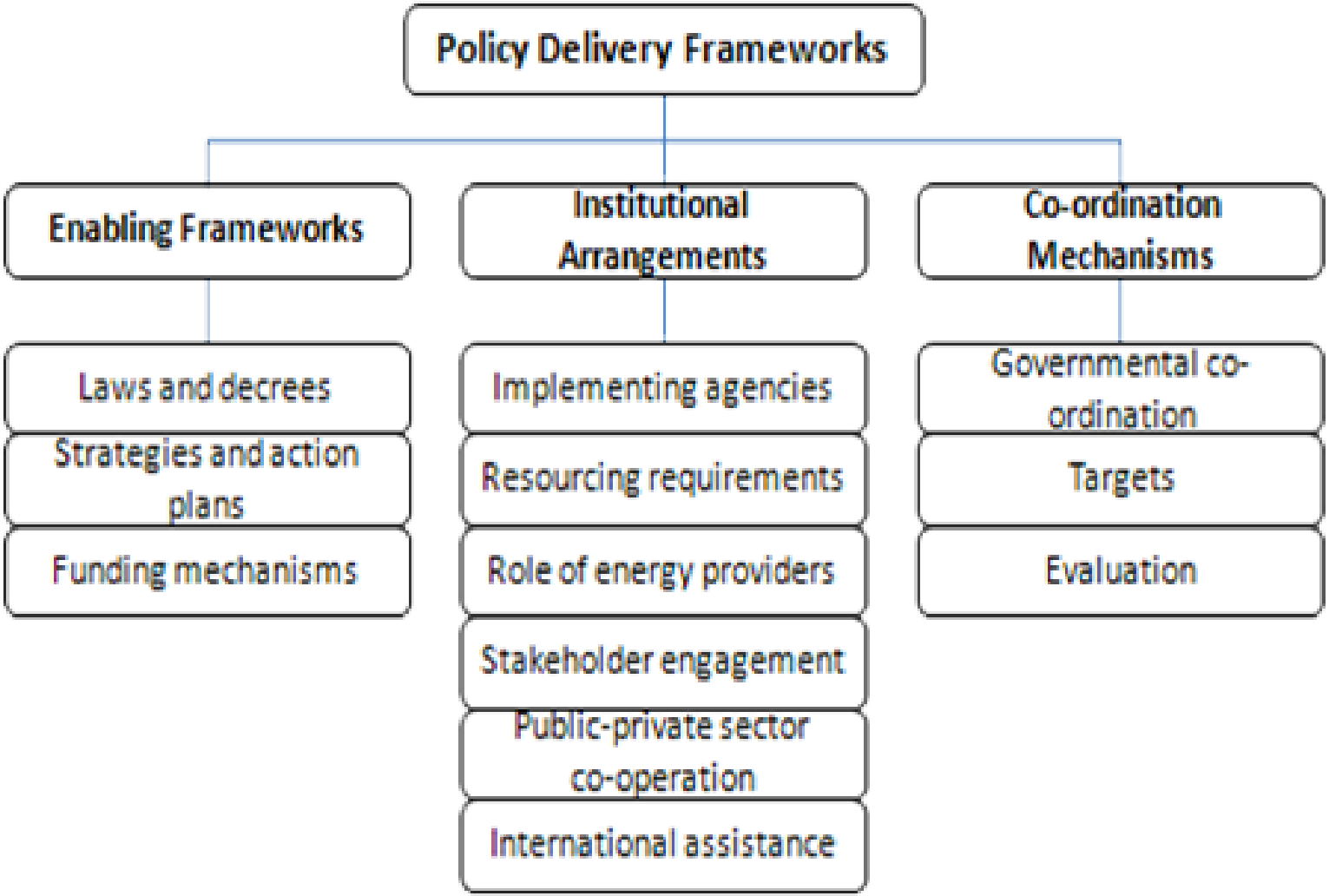
Energy Efficiency Policies for Buildings

Policy	Example
Pricing mechanisms	• Energy and carbon prices
Regulatory and control mechanisms	• Buildings codes • Minimum performance standards • Obligations
Fiscal measures and tax incentives	• Subsidies and tax incentives • Green mortgages • Government direct investment
Promotional and market transformation mechanisms	• Appliance labelling • Energy performance certification
Technology development	• ZEB R&D and pilot projects
Commercial development and capacity building	• Creation of ESCOs • Training of code inspectors • Professional Certification
Financial remediation	• Green Investment Banks • Contingent financing facilities

Need to plan long-term goals and work backwards….

Governance: Policy Delivery Frameworks

The combination of legislative frameworks and funding mechanisms, institutional arrangements, and co- ordination mechanisms, which work together to support implementation of energy efficiency strategies, policies and programmes.



What makes for an effective policy delivery framework?

- Implementation authority is clear
- Accountability is established
- Political consensus is built
- Implementation partnerships are created
- Resources are mobilized
- Oversight arrangements are in place

Summing up

- Energy efficiency in buildings is key to carbon mitigation, energy security, economic development
- Policies are needed to deliver low energy buildings and governance in the form of delivery frameworks is crucial to ensuring effective implementation.

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