



Evangelos Panos :: Energy Economics Group :: Paul Scherrer Institut

Energy and climate policies in major European Countries: insights from the POLIZERO project

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The POLIZERO project

- Assess a suite of Swiss decarbonisation policies
 - also based on successful European examples
 - using stakeholder consultation and position papers
- EU decarbonisation impacts on Swiss policies/targets
- Robust dynamic adaptive Swiss policy pathways

The POLIZERO project has
received funding from the Swiss
Federal Office for Energy



Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Bundesamt für Energie BFE
Office fédéral de l'énergie OFEN



(Image: Keystone/SDA)

Model-based exploration for efficient policies

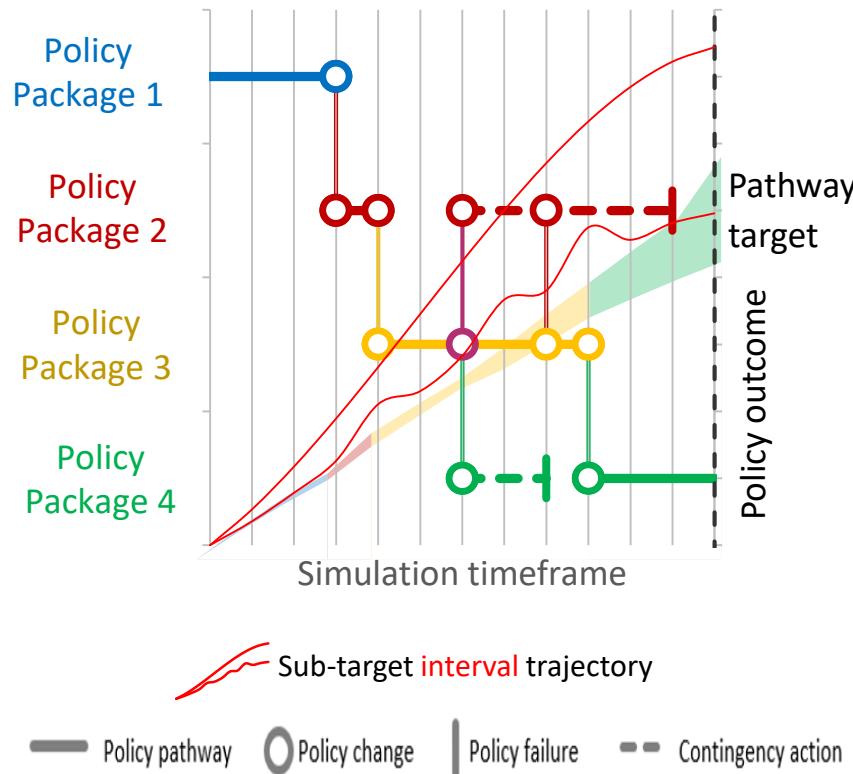
JRC EU TIMES model: Policy performance

- EU energy and climate targets scenarios
- Swiss policy explorative pathways
- Parametric analysis of policy contextual factors
- Scenario matrix with policies performance



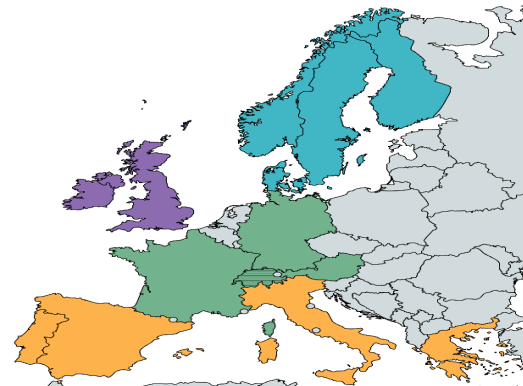
AIM model: Adaptive policy making

- Machine learning functionality
- When and why a policy deviates from its target
- Visualisation of policy pathways
- Monitoring of contextual factors for policy change



WP1: Policy inventory in selected European countries

- Collecting and consolidating policies from:
 - IEA policy database and country reports
 - Climate policy database
 - RES Legal Europe database
 - Relevant EU and Swiss projects
 - National energy and climate plans and strategies
 - Transposition of the EU directives to national laws
- European Countries covered:
 - Central Europe (*CH, DE, FR, AT*)
 - Nordic region (*NO, SE, FI, DK*)
 - British Isles (*UK, IR*)
 - Southern Europe (*ES, PT, IT, GR*)

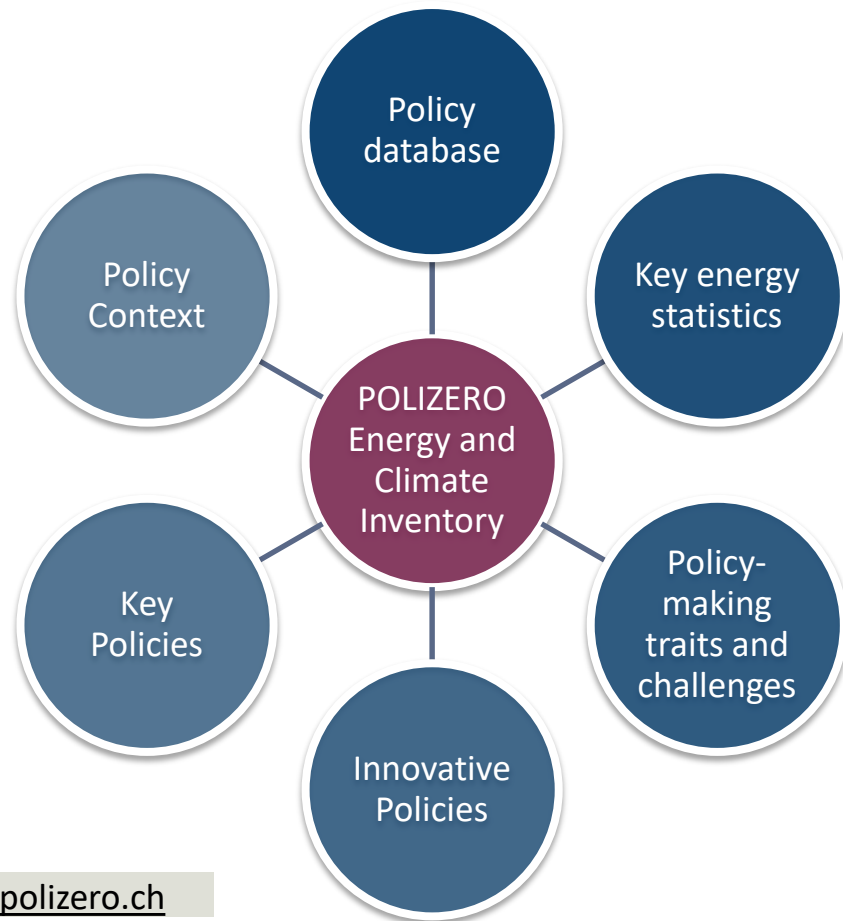


Policy Inventory - main fields for policy description

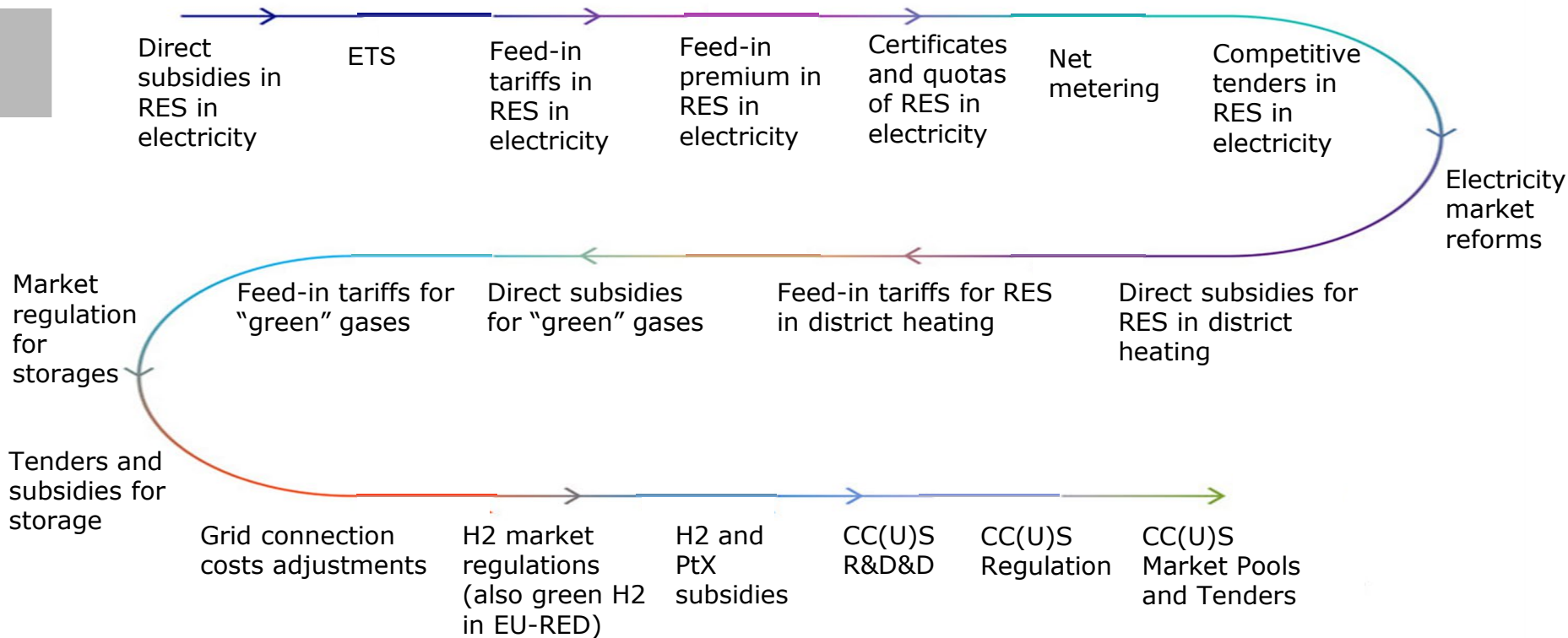
| ID | Policy | Policy type | Description | Start/End year | Status | Part of policy package |
|-----------------|--------|-------------|--------------|----------------|--------|------------------------|
| Replaces policy | Sector | Technology | Jurisdiction | Budget | Impact | Source |

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|------|--------------------------------|-----------------|-------------------------|-------|------|----------|---------|----------|------------------|---------------------|--------------|---------------|----------------|---|
| FR37 | Decree of 24 of April 2016 on | Targets | Decree of 24 April 2016 | 2016 | 2023 | In force | FR44 | FR60 | Energy sector | Renewable technol | National | | 15 GW (2018); | https://www.legifrance.gouv.fr/eli/decree/2016/4/24/2016-424 |
| FR38 | EV Infrastructure Charging Pro | Economic instr | In 2016, the ADVENIR | 2016 | | In force | | | Transport | Charging infrastruc | National | 100 MEUR (202 | 58700 charging | http://advenir.mobility |
| FR39 | Low Emissions Zone (Crit'Air) | Regulation | In France, the scheme v | 2016 | | In force | FR44 | | Transport | Vehicles | National | | | https://www.iea.org/ |
| FR40 | Support scheme for electricity | Economic instr | The Energy Transition E | 2016 | | In force | FR44 | FR86 | Energy sector | Renewable technol | National | | | https://www.iea.org/ |
| FR41 | Building code - EV charging | Regulation | Residential: New Buildi | 2015 | | In force | | | Industry, Servic | Charging infrastruc | National | | | https://www.iea.org/ |
| FR42 | Demonstration Fund "Vehicle | Capacity Buildi | The main objectives pu | 2015 | 2017 | Ended | | FR46 | Transport | | National | 1.2 BEUR | | https://appelsaprojet |

Policy inventory contents for each country



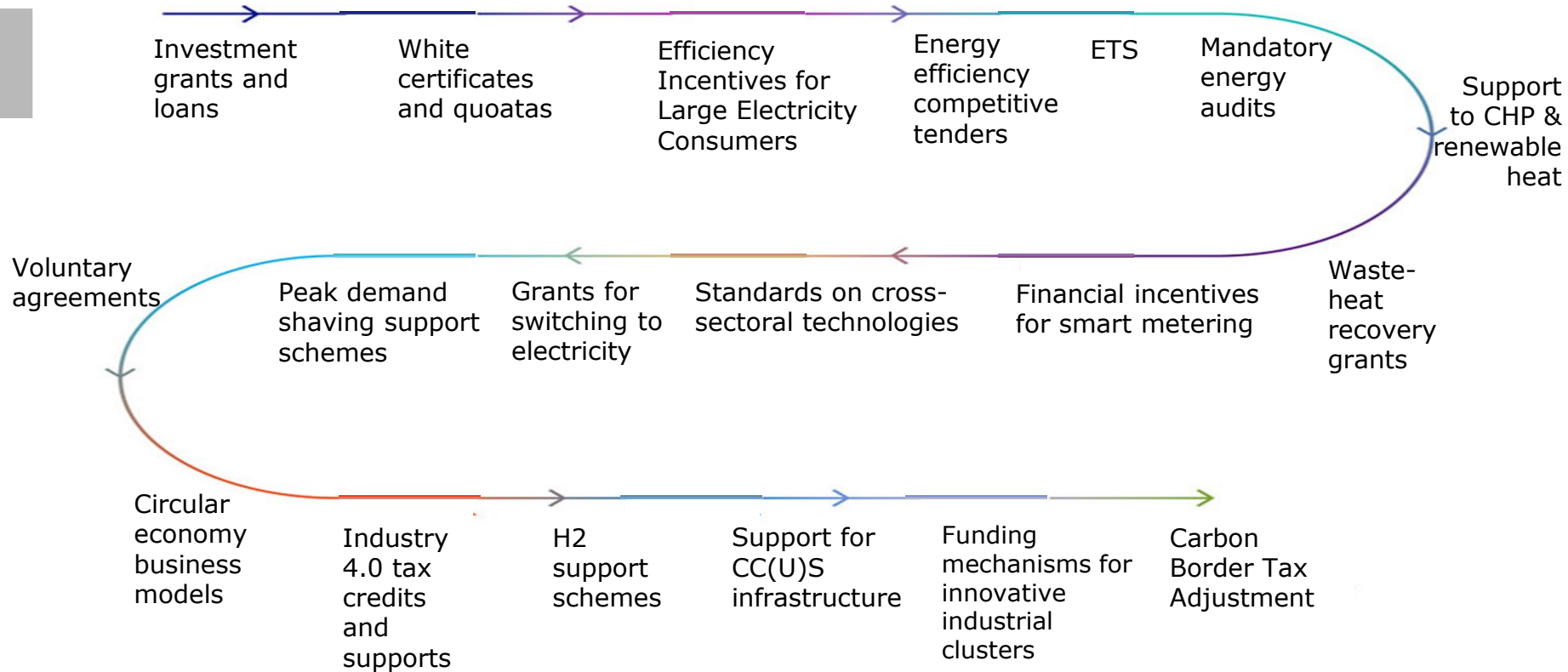
The evolving policy landscape in energy supply



Decarbonisation in energy supply – lessons learned

- Policy stability and predictability enables capacity build up
- Policy adjustments to reduce investment risks
- Integrated measures and mandates successful for heating and cooling
- Policy signals to make new options part of national energy systems

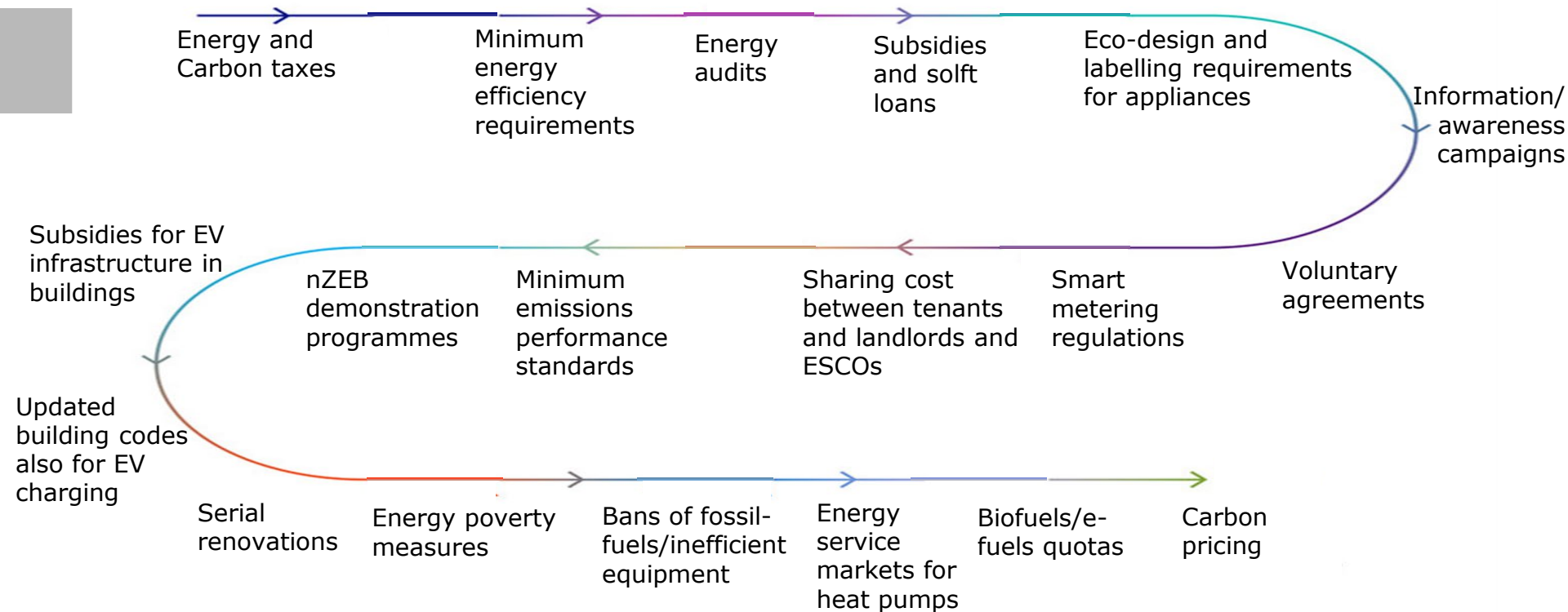
The evolving policy landscape in industry



Decarbonisation in industry – lessons learned

- Many decarbonisation projects lack positive business cases
- Frameworks encouraging markets for low-carbon high-priced products are discussed
- Grants to promote electrification have been successful so far
- Industry-energy sector policies coordination is needed
- Supports to circular economy and industrial symbiosis / innovative clusters

The evolving policy landscape in buildings

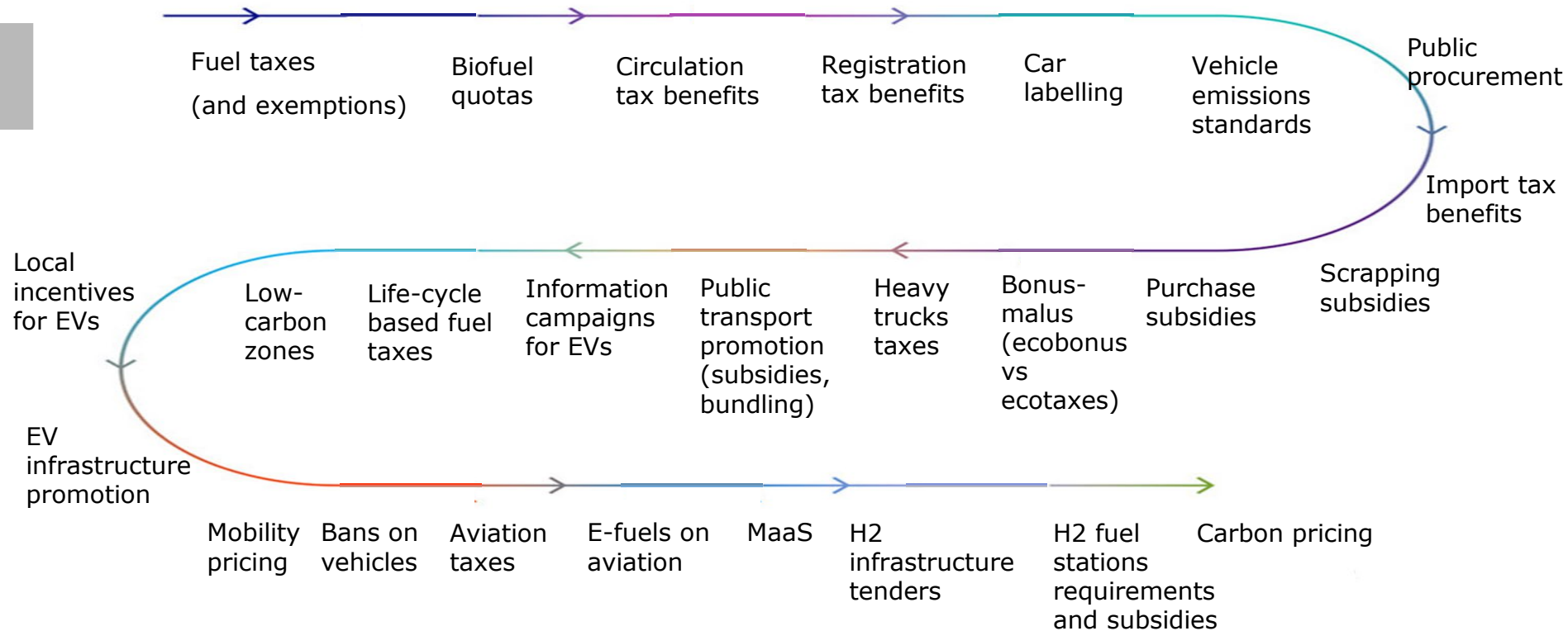


Note: this is not a strict chronological order and the instruments are non exhaustive

Decarbonisation in buildings – lessons learned

- Policy targets efficiency and decarbonisation acceleration
- Challenges are high upfront costs:
 - Incentives (subsidies, loans, tax regulations, ...)
 - Mandates (bans of fossil boilers,...)
 - Access to capital
 - Tackling energy poverty
- New financing schemes for sharing beneficiaries' costs (*split incentives*)
- Policies to change consumption behavior (campaigns, labelling, awareness,...)

The evolving policy landscape in mobility sector



Note: this is not a chronological order and the instruments are non exhaustive

Decarbonisation in mobility – lessons learned

- Subsidies were instrumental in accelerating EV sales, but broader portfolios are needed
- Information/Campaigns on alternative transport infrastructure
- Vehicle innovation complemented with innovative transport demand management
- EU-ETS experience sets the way to a carbon pricing scheme

Some conclusions from the policy inventory contents

- Post-2020 policies aim at enabling low-carbon innovations
 - especially in sectors with long investment cycles
- Strengthening of the carbon markets are on the table
 - expansion of ETS to transport/buildings , carbon border tax adjustments
- Social just transition is a major concern (*particularly in relation to carbon pricing*)
 - revenue re-distribution to households, end exemptions for certain sectors
- Strengthening of natural carbon sinks and access to international CO2 storage sites
- Security of supply and access to zero-carbon energy carriers concerns

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