Evaluating the Implementation of Energy Efficiency Measures from Article 8 and the Path to Article 11 Compliance

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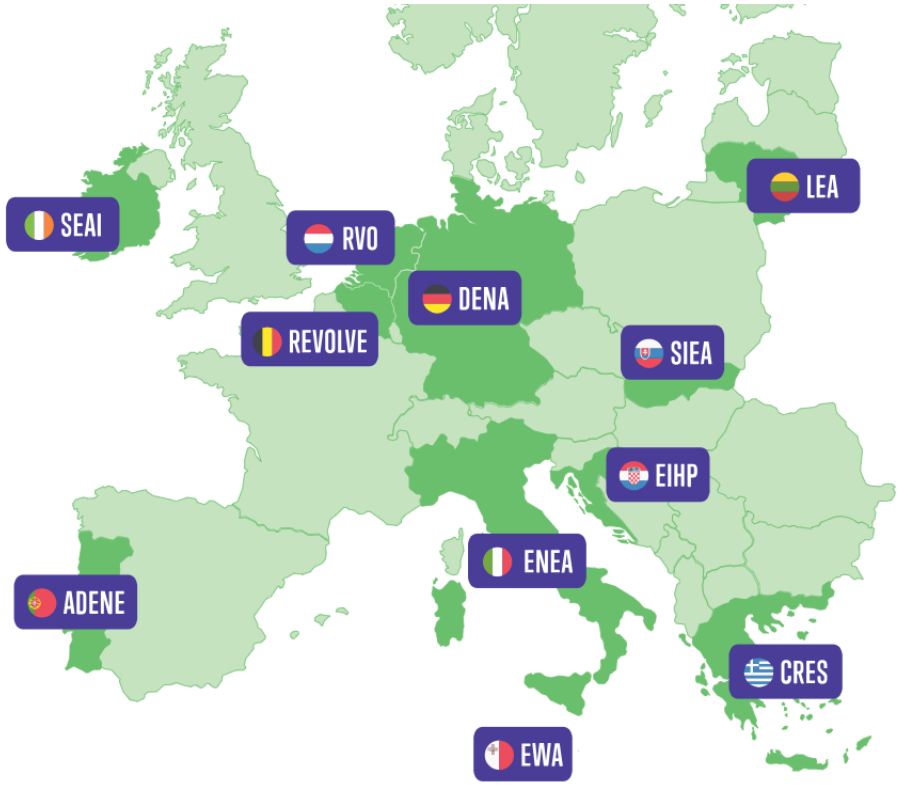
Context



Effect of Energy Audit (EA) obligation, mandated by Energy Efficiency Directive (EED), on the implementation of Energy Efficiency Measures (EEMs)

- A differentiation exists among countries regarding the implementation of EA obligation (LEAPto11 D2.1)
- This starting point, together with the role of EnMS, is key for EEMs data collection and analysis

Objectives and novelty

EVALUATION OF **EEMS DATA COLLECTION AND MANAGEMENT**

IDENTIFICATION OF GOOD PRACTICES ON EEMS IN CURRENT ART.8 CONTEXT AND DIFFERENT OBLIGATION PHASES

IDENTIFICATION OF PROGRAMS **BEYOND ART.8** PROVIDING INFORMATION ON EEMS

ASSESSMENT OF THE **CURRENT STATUS BEFORE TRANSITIONING TO THE NEW ART. 11** REQUIREMENTS

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Methodology

Data collection strategy (1)

- Survey with qualitative & quantitative questions for for experts from Energy Agencies
- Designed to develop a comparative analysis and integrate expertise

Survey design (2)

12-question survey on:

- **Availability and structure of information** on EEMs under Art.8
- Role of **EnMS**, **action plans** and **facilitating factors**
- **Art.8 good practices and other relevant programmes** for EEMs implementation (art. 8 and beyond)

Data collection (3)

- Partners used different sources to answer the survey
- Consolidation of findings via partner consultations & additional research

Data analysis (4)

- Data provide insights **into 10 different regulatory and geographical approaches**
- They should be interpreted as **indicative and not representative of the EU**

Information sources

- **Public databases**
- **Non-public sources**
  - Energy Agencies
  - External databases
- **Direct interactions with bilateral calls**
- **European institutional sources**

Balanced approach

Partner countries used public, non-public (internal and external) sources based on availability and question type

Involved organisations

- National Energy Agencies: main contributors, providing data in over half of cases
- Ministries of Energy, Climate & Environment: frequently consulted
- Other ministries: limited role, consulted for specific cases

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Implemented and recommended EEMs reporting metrics in EA guidelines

	Implemented EEMS			
Country	Investment costs	Energy / CO_2 / Water Savings	Economic Savings	Economic Indicators
Germany	✗	✗	✗	✗
Greece	✗	✗	✗	✗
Ireland	✗	✓ [energy]	✗	✗
Italy	✓	✓	✓	✓
Lithuania	✓	✓	✓	✓
Netherlands	✓	✓ [energy]	✗	✓ [PBT]
Malta	✗	✓ [energy, water]	✓	✗
Portugal	✓	✓ [energy]	✓	✓ [PBT]
Slovakia	✗	✗	✗	✗

✓ included in EA guidelines with a specific indicator

✓ included in EA guidelines with free format

✗ not included in EA guidelines

- **Guideline availability:** all examined Countries provide publicly available guidelines for EAs, except one (Croatia) where they are regulated by law
- **Implemented vs recommended EEMs**: information is more frequently requested for recommended EEMs (9 countries) than for those that have already been implemented (7 out of 9 countries)
- **Metrics**: commonly recommended indicators include energy and economic savings, initial investments, and payback time
- **EE incentives**: while the consideration of incentives is occasionally suggested, they are often overlooked in practice

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Implemented and recommended EEMs reporting metrics in EA guidelines

	Implemented EEMS				Recommended EEMS			
Country	**Investment costs**	**Energy / CO_2 / Water Savings**	**Economic Savings**	**Economic Indicators**	**Investment costs**	**Energy / CO_2 / Water Savings**	**Economic Savings**	**Economic Indicators**
Germany	✗	✗	✗	✗	✓	✓ [energy, CO_2]	✓	✓ [NPV, IRR]
Greece	✗	✗	✗	✗	✓	✓ [energy]	✓	✓ [PBT]
Ireland	✗	✓ [energy]	✗	✗	✗	✓ [energy]	✗	✗
Italy	✓	✓	✓	✓	✓	✓ [energy]	✓	✓ [NPV, IRR, PBT]
Lithuania	✓	✓	✓	✓	✗	✓ [energy, CO_2]	✗	✓ [PBT]
Netherlands	✓	✓ [energy]	✗	✓ [PBT]	✓	✓ [energy]	✗	✓ [NPV, PBT]
Malta	✗	✓ [energy, water]	✓	✗	✓	✓ [energy, water]	✓	✗
Portugal	✓	✓ [energy]	✓	✓ [PBT]	✓	✓ [energy]	✓	✓ [PBT]
Slovakia	✗	✗	✗	✗	✓	✗	✓	✓ [NPV, IRR, PBT]

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✓ included in EA guidelines with a specific indicator

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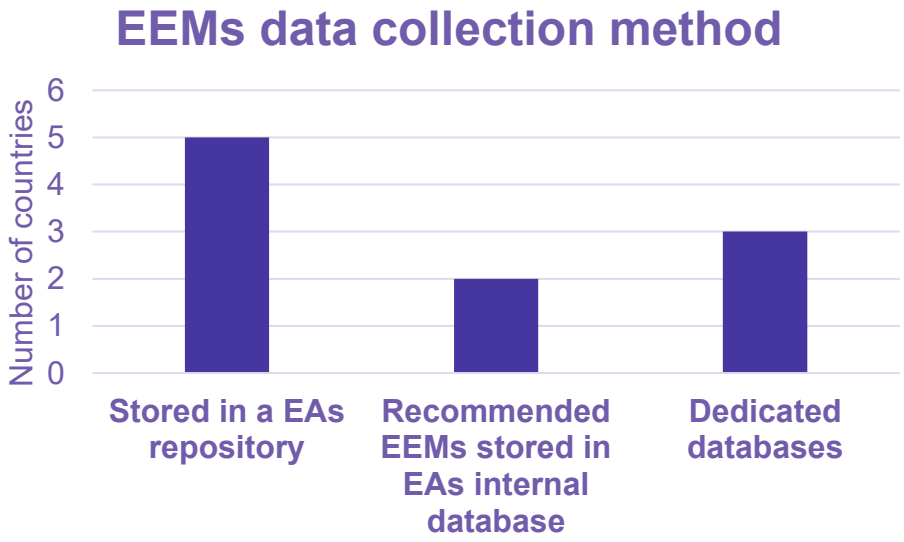
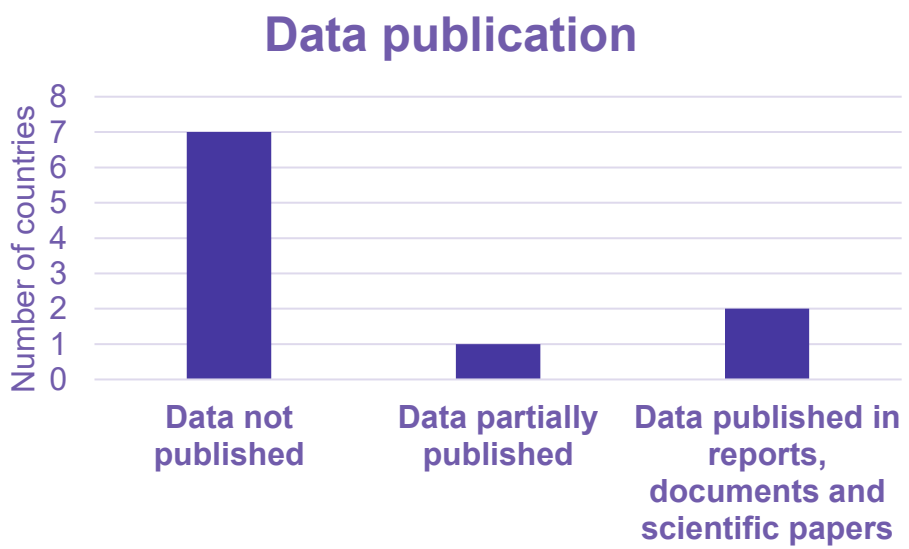
Availability of EEMs data





- **From EA obligation to data collection?** Portugal - EA web portal SGCIE
  Italy - EA web portal Audit102
  Ireland - EA compliance notification system
- **Data availability**: High variation across countries impacts on policy evaluation and cross-country comparison
- **Evolving trend**: Transition from document-based collection to digital database and online platforms

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Existing information on EEMs

General results

- **Variations in reporting** impact comparisons
- **Key challenges:**
  - **Data gaps** with partial or missing information
  - **Differences in reporting periods**
- **EEMs per audit:** ratio varies from **0.5 to 3**
- **Implementation rate**
  - Preliminary comparison between recommended and implemented EEMs
  - Differences reflect **national approaches to EAs** and follow-ups
  - Recommended EEMs not always align with later implementation

Information at Country level

- In **four countries out of ten**, information on implemented and recommended EEMs can be extracted from a database
- In some other countries the current situation is evolving towards higher data availability
- In **Germany** information on recommended EEMs is available, while in **Ireland**, **Italy** and **Portugal** also for implemented ones and in the last two countries for the 2019-2023 period
- For these countries, two indicators can be computed for implemented or recommended EEMs, or both
  - **Average final energy savings per EEM (toe)**
  - **Final energy savings / Energy consumption (%)**

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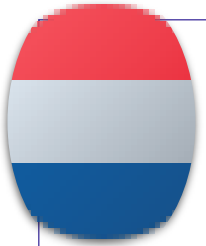
Obligation to implement EEMs and Action plan

Portugal

- Only LEAPto11 country with an **obligation to implement EEMs** under Art.8
- Monitoring since 2008 via SGCIE system and **nearly 100% implementation rate**



Netherlands

- Obligation for EEMs with a ≤5-year PBT under national regulations (not related to Art.8)
- Companies report every 4 years, tracking 120 standard EEMs

Italy

- Since 2020, obligation for **energy intensive companies** applying for a tax relief to develop an EA and implement at least one measure
- New legislation operational in September 2024 and verification methods under revision

Other countries

- In Germany and Ireland no obligation but collect data on implementation
- In remaining countries no obligation to implement EEMs, and no data collected

Voluntary action plan practices

- ✓ Drawing an action plan: Greece, Lithuania
- ✓ Publishing an action plan: Germany, Greece, Lithuania, Portugal

Drawing an action plan required as part of national regulations

- ✓ Germany, the Netherlands, and Portugal

In half countries there are neither voluntary practices nor legal obligations

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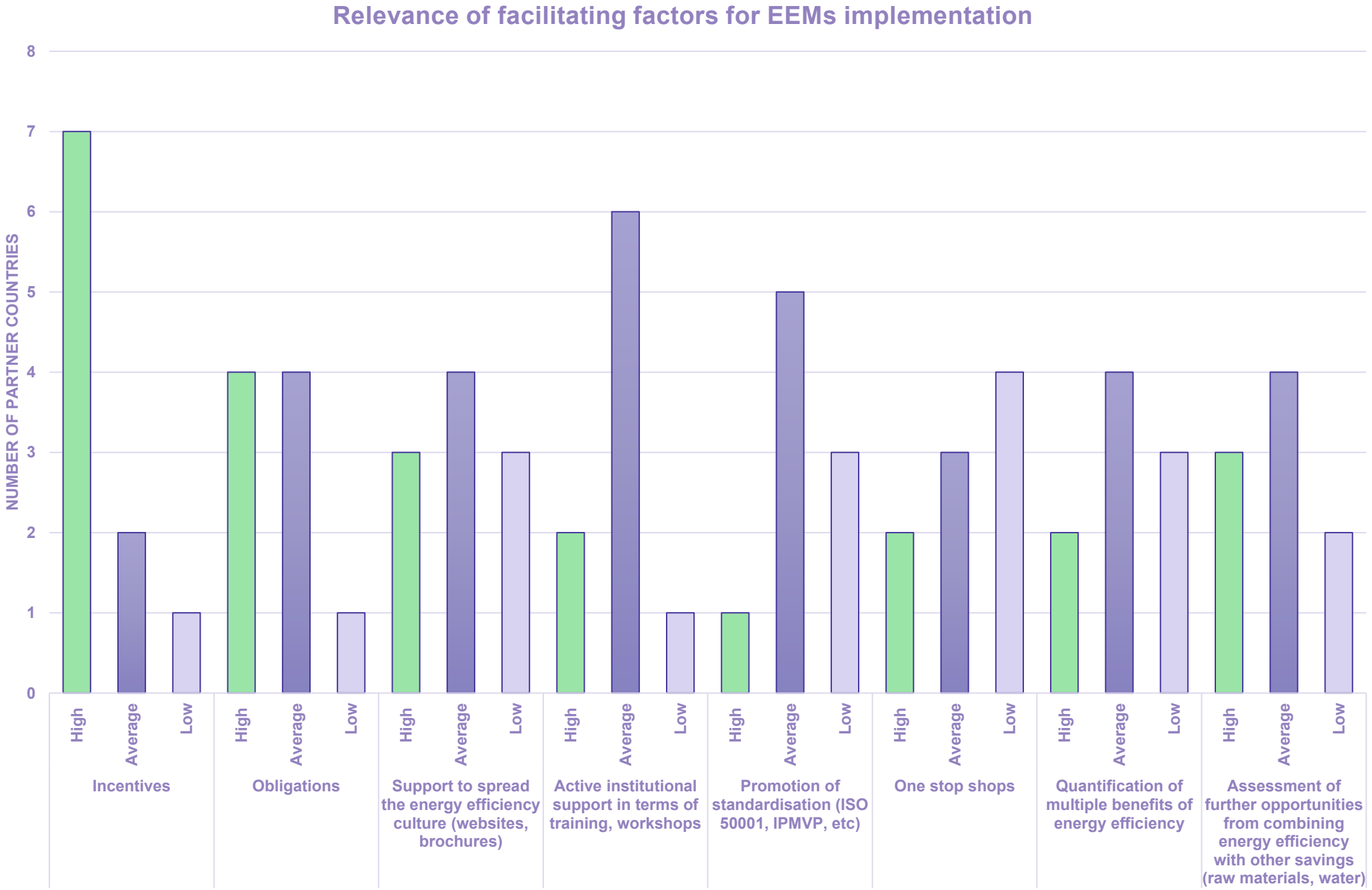
EEMs facilitating factors

- **Opinions of the individual experts and not official stance of their respective agencies**
- The Y-axis represents the number of agencies attributing each relevance level (high, average, low) to a factor

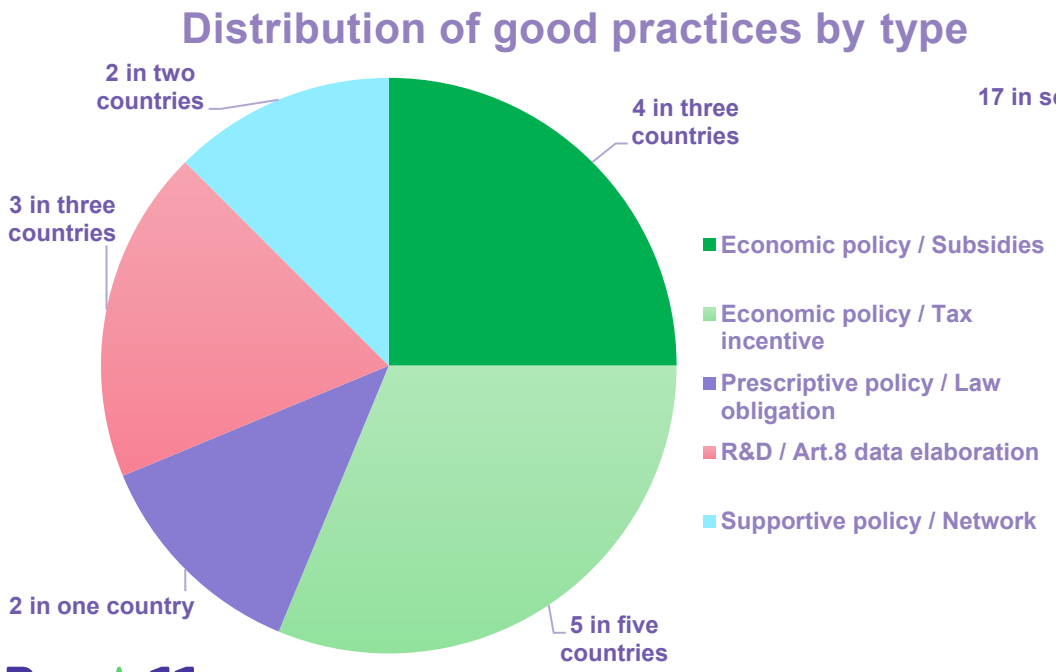


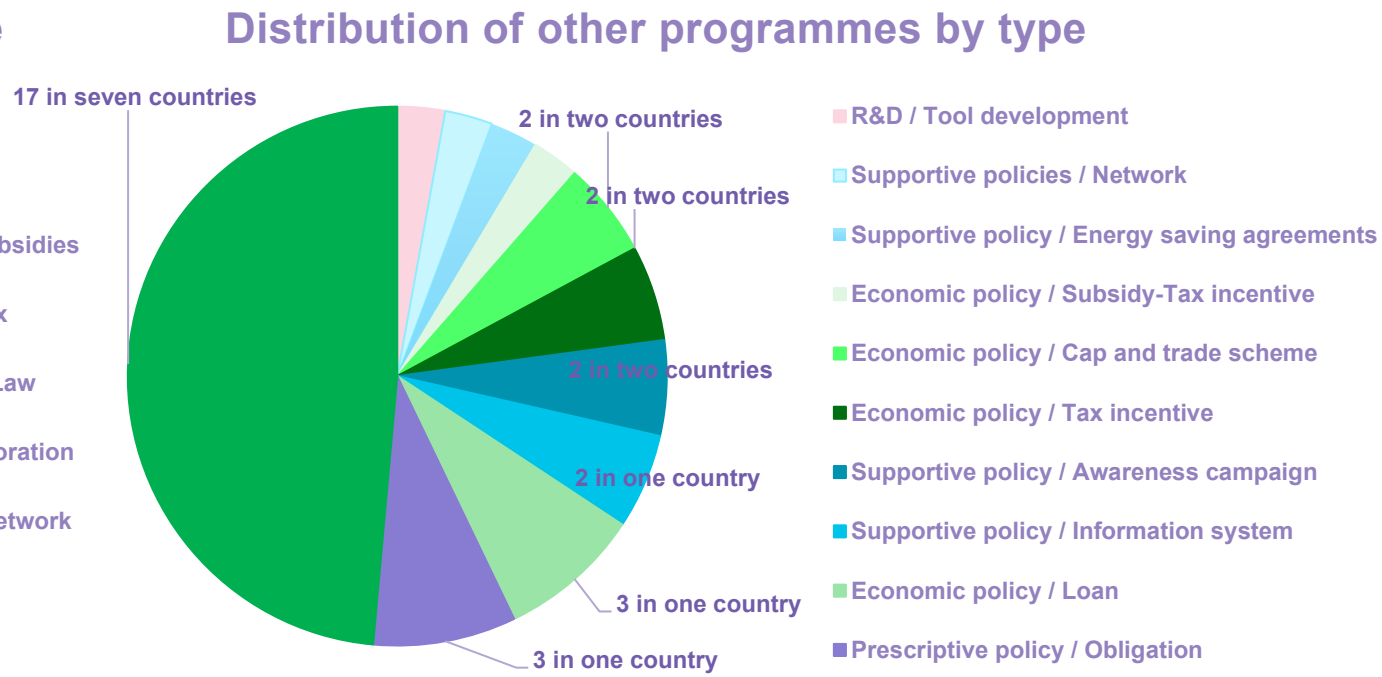
Identification of good practices and other programmes

Both **Art.8 good practices** and **other programmes** to be relevant should meet two criteria

1. Having a **significant impact** in terms of energy savings and business participation
2. Developing **effective data collection** on EEMs

The difference is that good practices deal with EEMs implementation under EED Art.8





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Art. 8 good practices supporting EEMs implementation

18 good practices aimed at encouraging EEMs' implementation

- **Economic policies:**

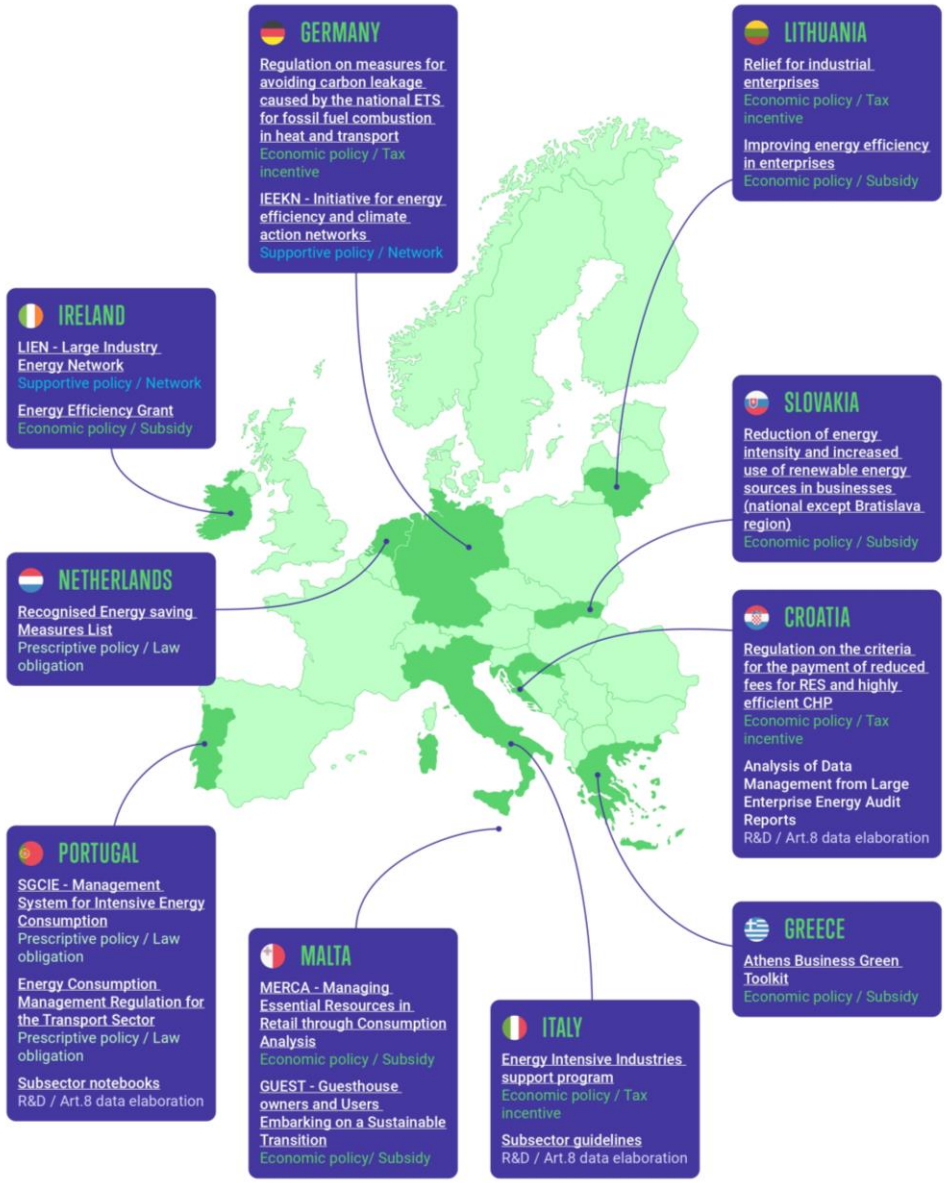
  Tax incentives for energy intensive industries under the condition that an EA is conducted or **Subsidies** using structural funds to support the implementation of EA recommendations

- **Supportive policies:**

  Networks of companies where having an EA is a condition to participate

- **R&D:**

  Subsector notebooks analyzing sectoral data from EAs and identifying EEMs



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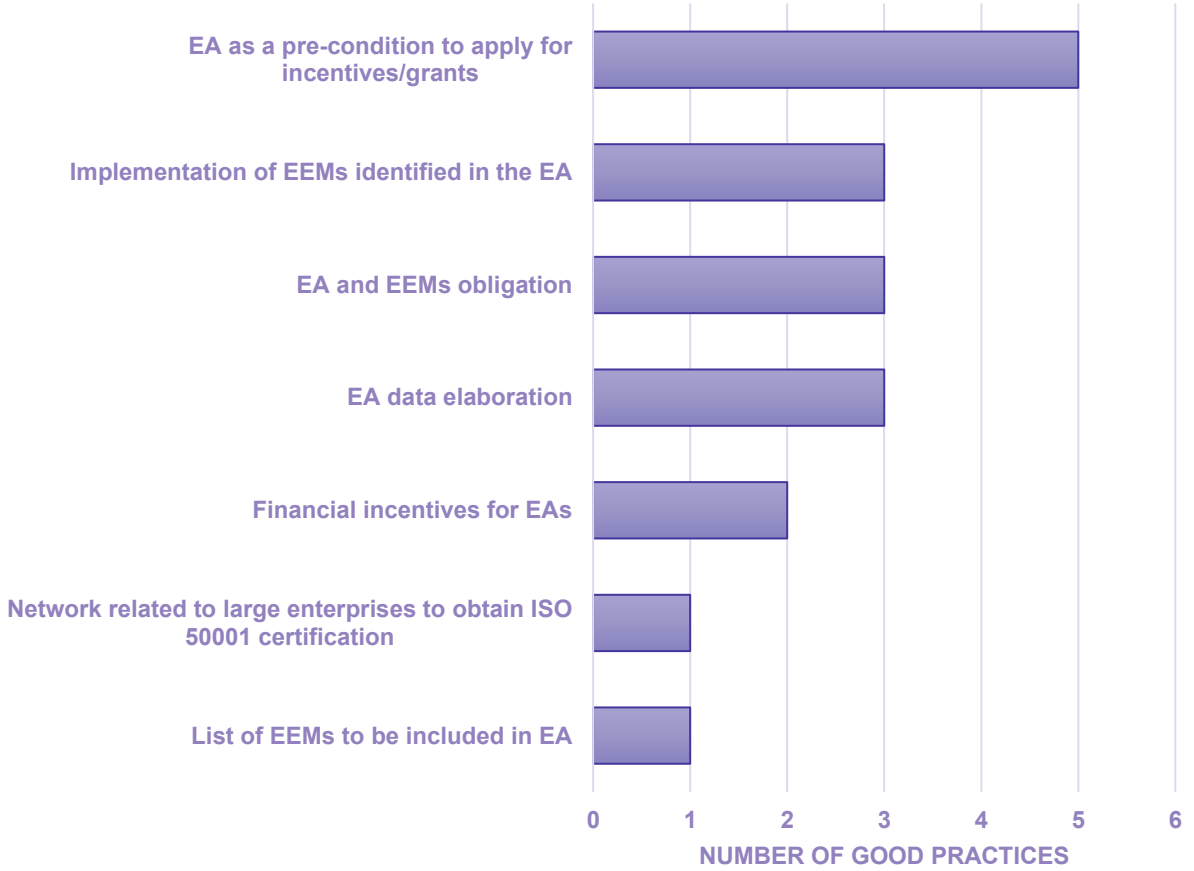
Art. 8 good practices and their link with EA

Identified good practices show different links with EA

- **EA as a pre-condition to apply for incentives/grants**: Croatia, Germany, Ireland, Italy, Lithuania
- **Implementation of EEMs identified in the EA**: Germany, Slovakia
- **EA and EEMs obligation**: Lithuania, Portugal
- **EA data elaboration**: Croatia, Italy, Portugal
- **Financial incentives for EAs**: Greece, Malta
- **Network related to large enterprises to obtain ISO 50001 certification:** Ireland
- **List of EEMs to be included in EA**: Netherlands

How good practices are related to EAs or EnMS?



Other relevant programmes

35 other relevant programmes identified

- **Economic policies**

  Emissions/energy **cap** to be achieved through **trade** and EEMs, **loans** and **tax incentives** for investments in EEMs, direct **subsidies** to support EEMs adoption

- **Prescriptive policies**

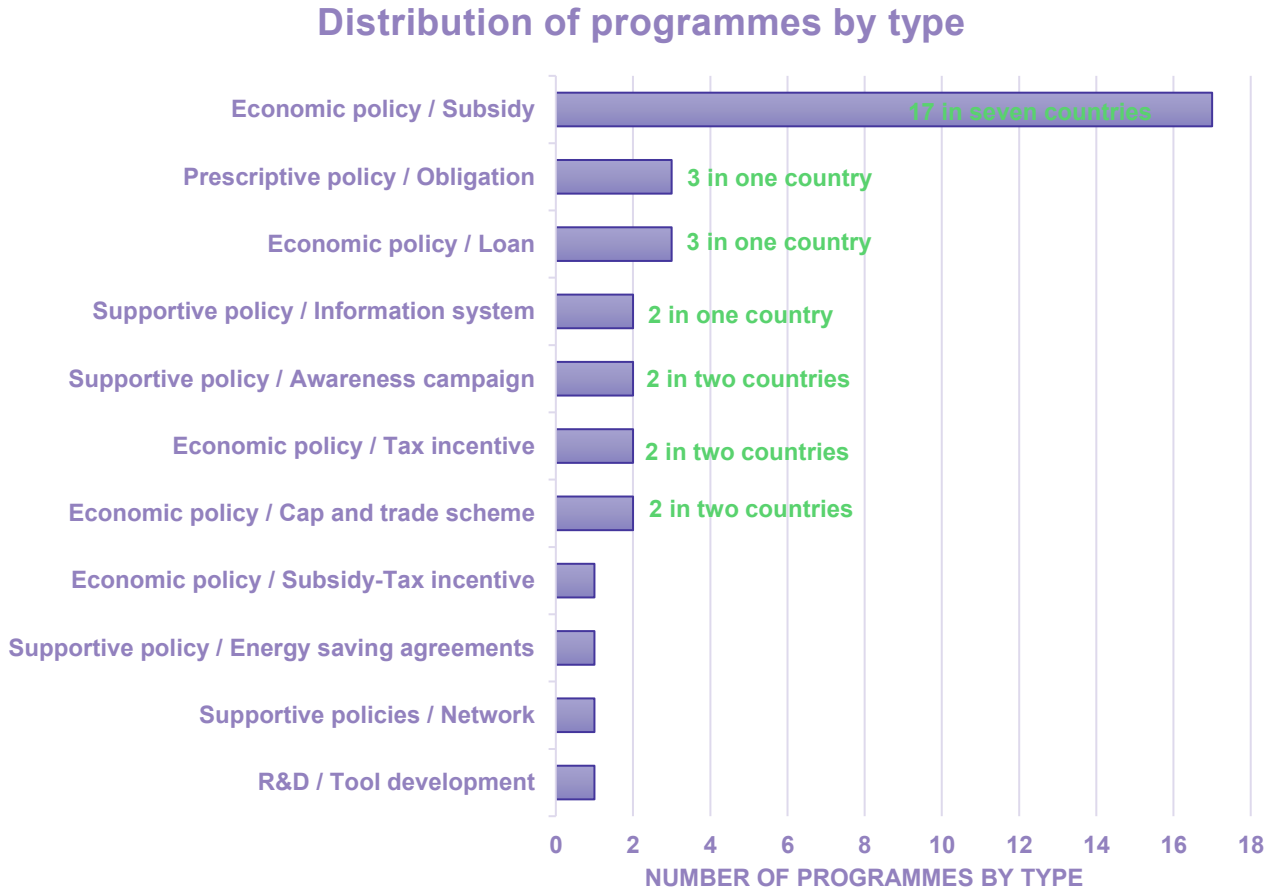
  Regulations requiring businesses to implement EEMs

- **Supportive policies**

  Awareness campaigns, **energy-saving agreements**, **information systems** and **networks**

- **R&D and innovation**

  Data analysis and **tool development**



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Main conclusions

Lack of harmonisation

- **Strong variation** in data collection and reporting practices
- Fragmented/voluntary approaches hinder **comparability and effectiveness assessment**

Need for common framework

- EU-wide framework (EED Art. 11) would improve **transparency and policy evaluation**
- Structured, transparent data essential to **unlock EE potential**

Link between reporting and policy instruments

- Weak connection between **reporting obligations and policy tools**
- Stronger link with **incentives and compliance** could boost EEM implementation
- Action plans under Art. 11 are a key opportunity for better follow-up and accountability

Mutual learning

- **Exchange of good practices** (guidelines, plans, monitoring tools) should be strengthened

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Thank you for your attention

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