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Summary of European States Questionnaires on Hydropower & WFD

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Preparation of workshop

Questionnaire to European States (May/June)

- ▶ Replies: 23 European States (missing MS: CY, DK, EE, EL, IE, MT; SK just submitted)

Drafting of Issue Paper (May-Sept)

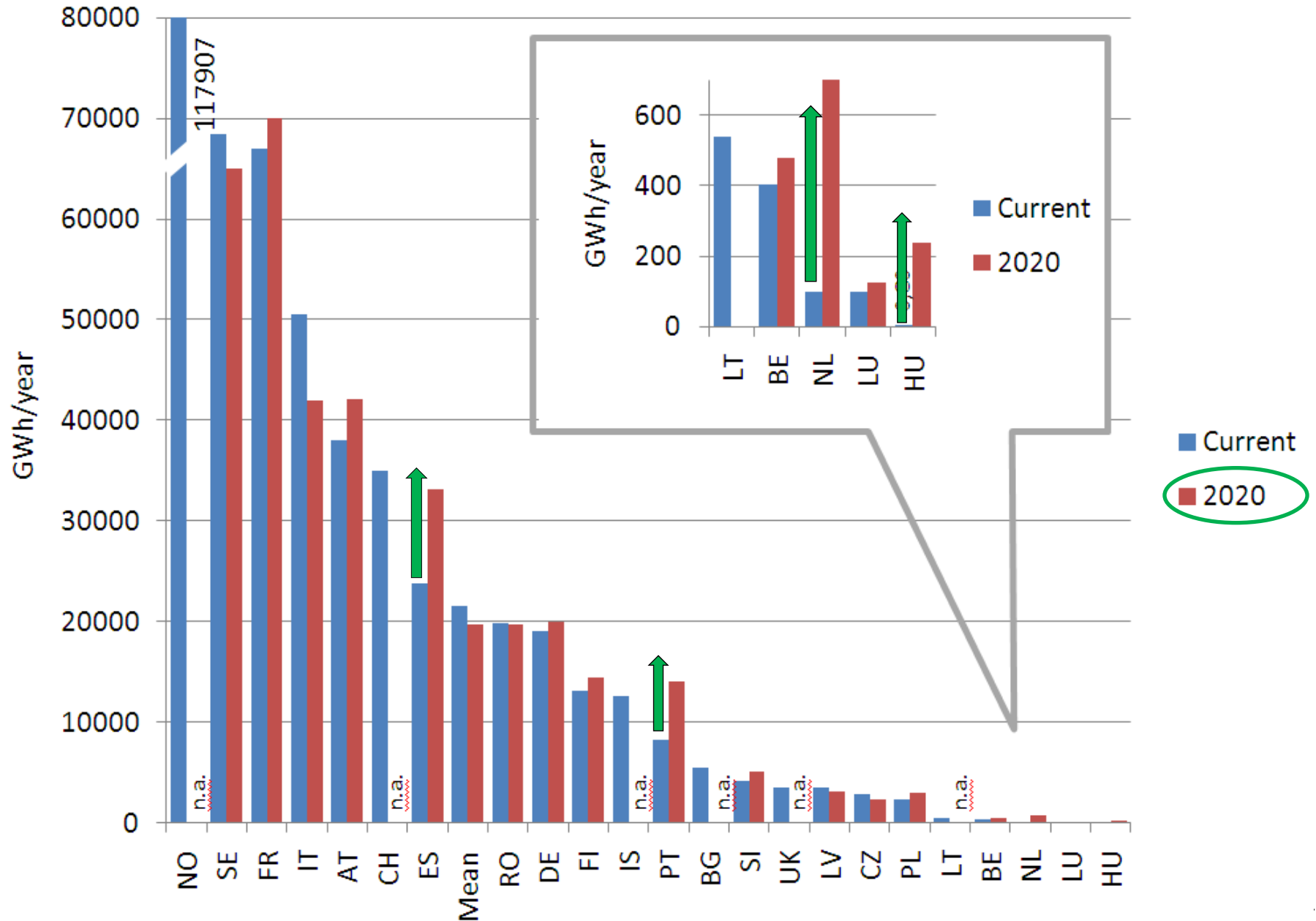
- ▶ Draft 2 incl. questionnaire summary; Proposal of topics for discussion (Sept 2011)
- ▶ Draft 1 sent for comments in May 2011



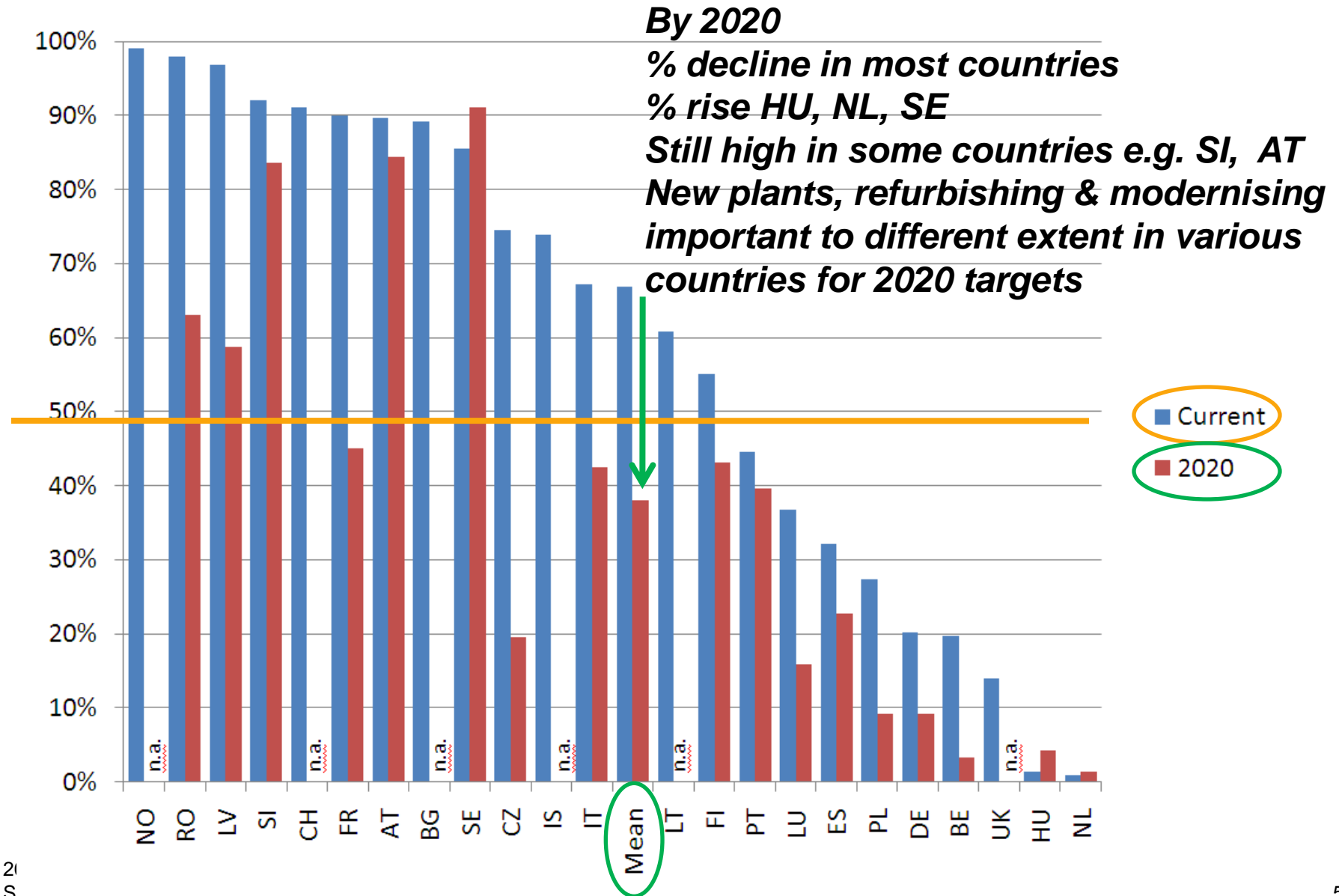
Content of presentation

- ▶ Key figures on hydropower (HP)
- ▶ Legal & technical requirements for environmental improvement (focus on key domains)
- ▶ Incentives
- ▶ Strategic planning tools
- ▶ WFD Art. 4.7 implementation

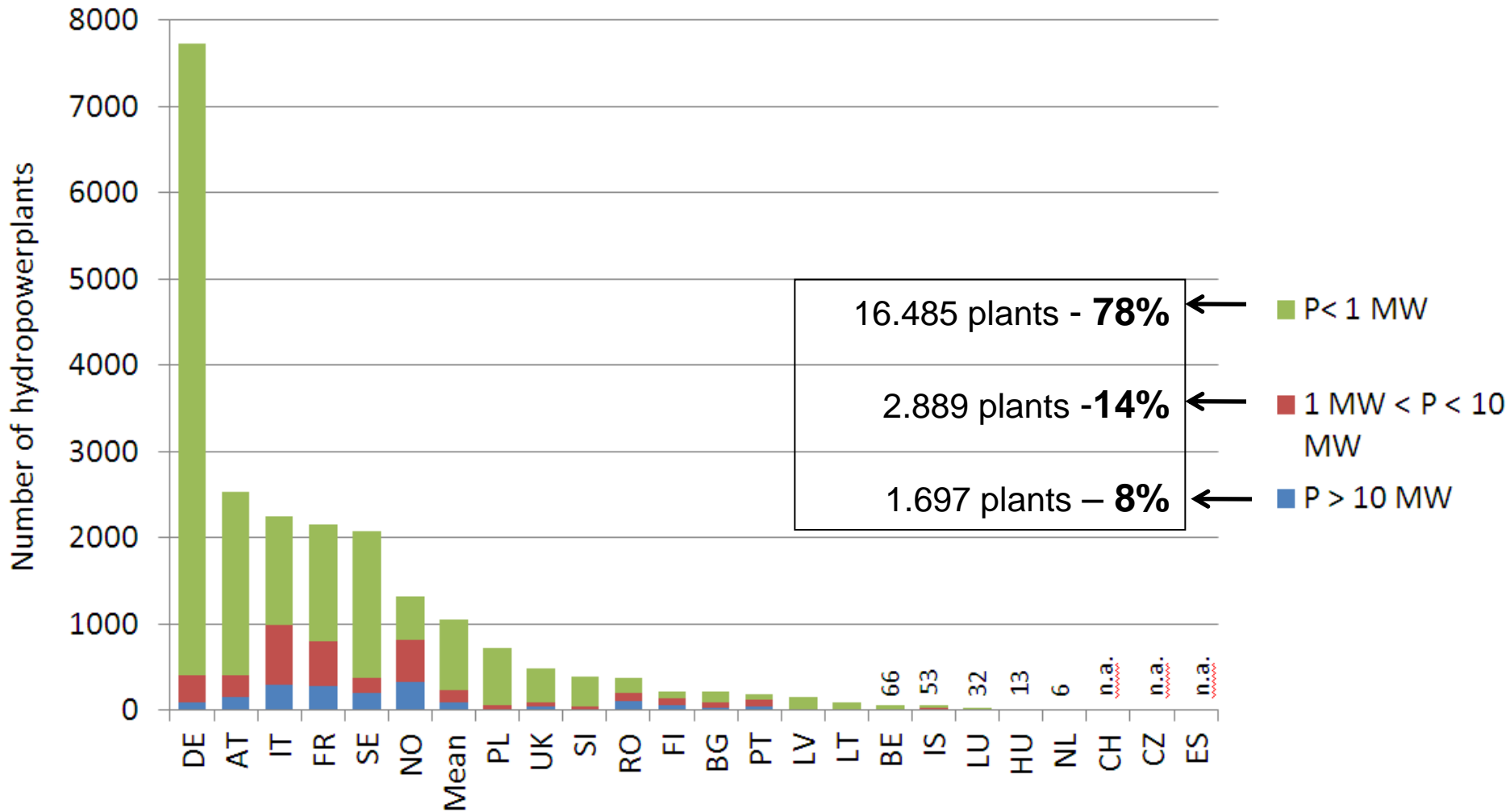
Electricity production from HP (current – 2020)



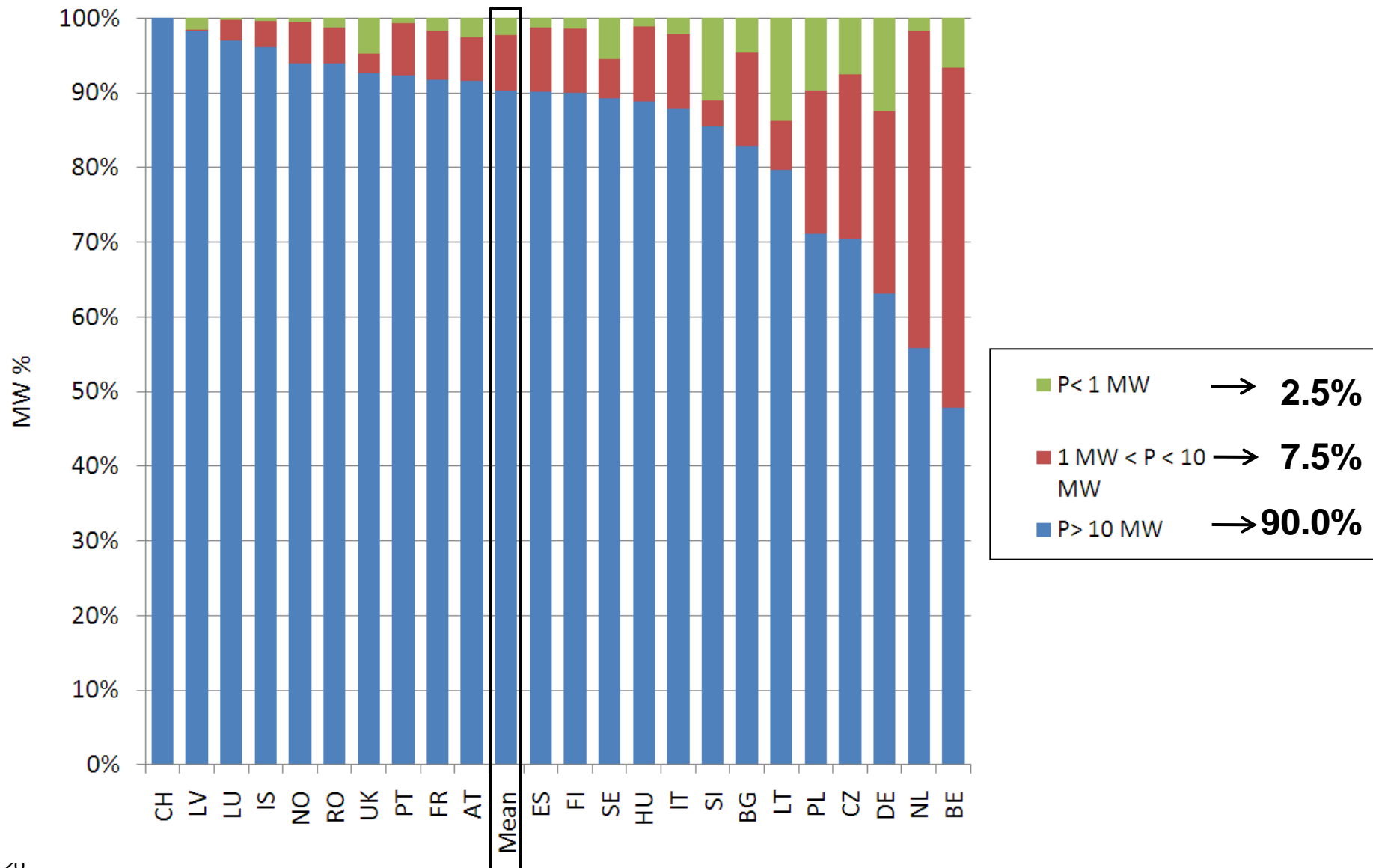
% HP electricity production from RE (current-2020)



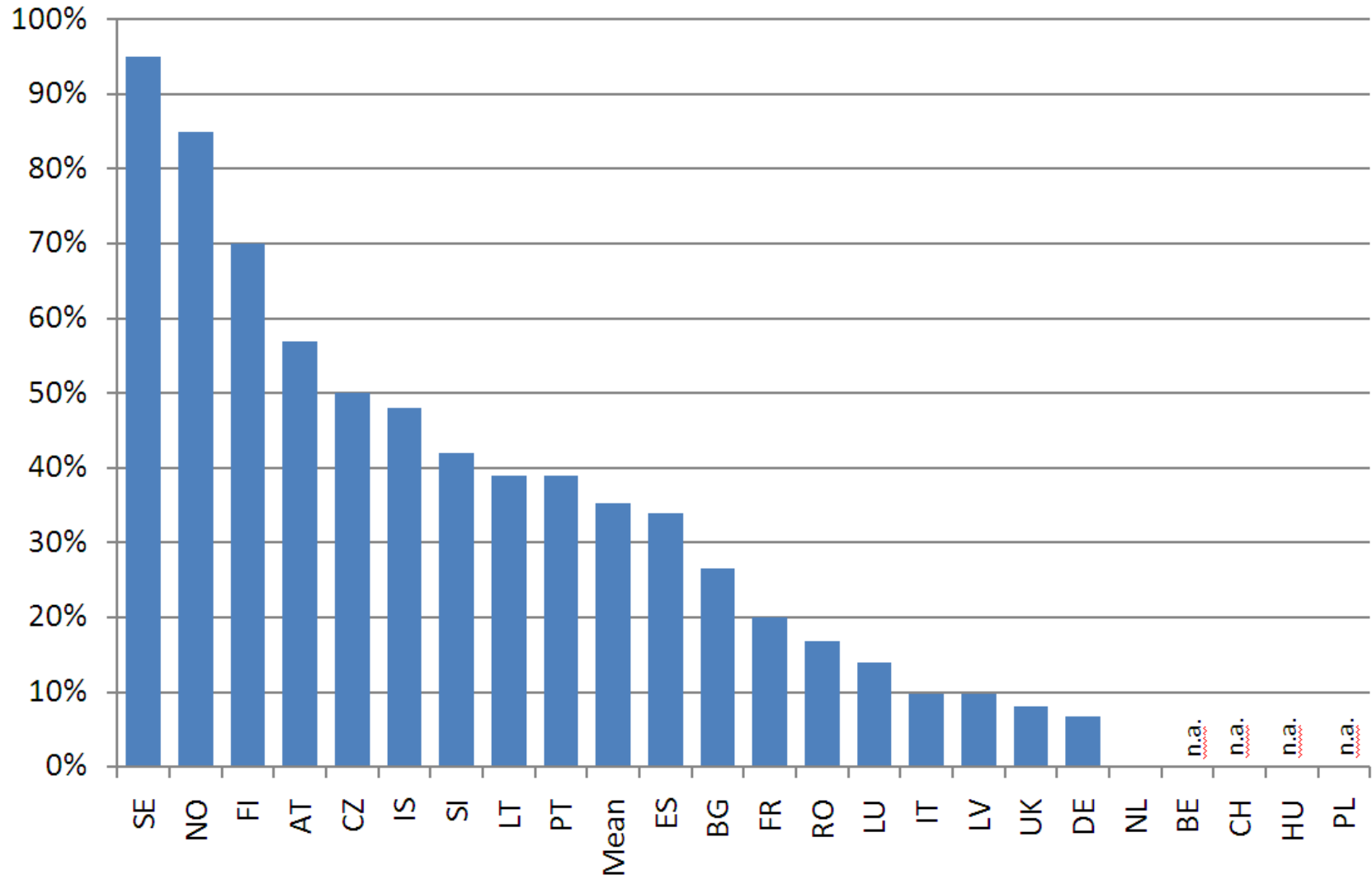
Number of hydropower plants



Installed capacity of different plant sizes



HMWB designated due to hydropower





Legal requirements – HP permits

- ▶ **Most countries: Only time-limited permits**
- ▶ SE, FI, IS, LT, NL: Permits of unlimited duration
- ▶ AT, DE, UK, NO: Mix of unlimited + time-limited
- ▶ **Changes to permits can be made & measures requested (via permit revision or at any time)**
 - ▶ When considered necessary to achieve objectives
 - ▶ When a degradation of env. conditions has occurred



Specific legal requirements for env. improvement

	Legislation and/or recommendation	Defined in individual cases	Generally no
Minimum ecological flow	AT, NL, RO, NO, LT, HU, BG, LV, IT, FR, DE, CH, CZ, ES, SI, UK, PT, CZ,	LU, SE, NO, FI, DE, BE, IS	FI
Upstream continuity facilities	AT, BG, FR, DE, LV, LT, LU, NL, RO, CH, SI, NO, PT, UK	FI, IT, NO, BE, CZ, IS, ES	FI, SE
Downstream continuity facilities	FR, DE, RO, CH, SI, NL, UK	IT, LV, LU, NO, (AT), BE, CZ, IS, ES	BG, FI, LT, PT, SE
Hydropeaking mitigation	AT, LT, LV, LU, RO, CH, DE	FI, FR, DE, IT, NO, PT, SE, UK, CZ, IS, ES, SI	SE, NL, BG, BE
Sediment transport	BG, FR, IT, CH, UK	FI, DE, NO, PT, (AT), CZ, IS, SI	LV, LT, LU, NL, SE, BE, RO



Legal requirements for new & existing HP plants

▶ **New plants**

- ▶ Most countries: **Requirements for minimum flow and upstream continuity for every plant**
- ▶ Several countries: **Exceptions to requirements**, e.g. no fish pass required if no significant fish migration, no natural fish habitats, natural obstacles present

▶ **Existing plants**

- ▶ Most countries: Requirements present but not for every plant; Measures requested case-by-case (e.g. new permit conditions)



Need to improve & support legal requirements

- ▶ Better linkage to WFD requirements for GES/GEP achievement
- ▶ Monitoring and data improvements, e.g. on effectiveness of fish passes
- ▶ Further technical research and innovation to improve downstream continuity



Technical requirements for env. improvement

- Usually set **on case-by-case basis**, e.g. within permit requirements; For minimum flow & upstream continuity: Several countries have standards in law or recommendations

	Technical standard set by law or recommendation	Set on case-by-case basis	No relevant method defined
Minimum ecological flow	PT, LT, BG, AT, CH, ES, SI, LU, UK, PT, NO, IT, DE, CZ UK	LU, SE, NO, LV, FR, FI, BE, IS, ES	SE, NL, BG
Upstream continuity facilities	LT, RO, AT, ES DE, NL, UK	FI, FR, IT, LV, LU, NO, PT, RO, SE, CH, UK, BE, CZ, IS, SI	BG, CH
Downstream continuity facilities	BG, LT, RO, NL, DE UK	FR, IT, LV, LU, NO, RO, CH, UK, BE, CZ, IS, SI	AT, BG, FI, LT, PT, CH, ES
Hydropeaking mitigation	LT, RO	AT, FI, FR, DE, LV, IT, LU, NL, NO, PT, SE, CH, CZ, IS, ES, SI	BG, SE, CH, UK, BE
Sediment/bedload transport	DE, UK	AT, FR, IT, LU, NO, PT, CH, UK, CZ, IS, SI	BG, FI, LV, LT, NL, RO, SE, CH, BE



Incentives to support HP & improve water status

- ▶ Most countries use incentives to support HP but these are **not all related to ecological criteria**

	Yes	No	Under development
Feed-in tariffs	DE, FR, IT, LV, UK, CZ, ES	AT*	
Support schemes for new plants	DE, FI, IT, LV, RO, UK, CZ	AT*, LT	NO
Support schemes for modernisation	AT, FI, DE, RO, UK, CZ	IT,	NO, LT
Ecolabelling	AT, CH, DE, FI, SE	IT, LT	FR
Tradable certificates	DE, NO, RO, SE	AT, FI	FR
Simplified authorisation and licensing procedure	FR,	DE, FI, LT	
Compensation for energy production loss	CH	AT, DE, FI, FR	



Example of ecologically relevant incentive

- ▶ **CH: Compensation scheme** for energy production loss (2011 revision of Water Protection Act)
 - ▶ Payment of full compensation to the operator for required measures at existing plants (equalising basins, bypasses, etc.); financed via additional charging of the consumers



Strategic planning tools for HP development

- ▶ **Used in most countries** (not in LU, BE, CZ, SE, BG, FI)
- ▶ Most tools applied **on national and regional level**; NO, DE and FR also use tools **on basin level**
- ▶ Part of **RBMP, NREAP, HP sector planning, land use planning**
- ▶ In many countries, a **combination of tools** used
 - ▶ FR: HP appropriate areas identified in RE planning schemes; list of protected rivers based on water law (no-go rivers; rivers with continuity restoration as priority)



Designation of areas for new hydropower use

- ▶ **Priority areas for further HP development:** e.g. existing non-removable cross-river structures, existing dams, AWBs
- ▶ **Areas protected from further HP development:** e.g. high status WBs, rivers of high biological value, free-flowing stretches of river, migratory fish rivers
- ▶ **Areas with HP development possible under restrictions:** e.g. priority given to restoration targets, special conditions set

Planning tools based on trade-offs between environmental, recreational and fishing interests versus energy production and economical aspects



WFD Article 4.7 – GES deterioration

- ▶ In most countries, it is **generally assumed that a new HP plant will lead to a deterioration of GES** and the **procedure of Art. 4.7 is generally followed**
- ▶ In some countries, it depends on the situation, e.g.:
 - ▶ Current status of WB, type of plant, obligatory and feasible mitigation measures (AT)
 - ▶ Case by case assessment; any new plant deteriorates high status (FR)



WFD Article 4.7 – Current application for HP

Yes (number of plants) No

Has Article 4.7 been already applied for new hydropower plants?

AT (2), IT (nn), NO (nn), PT (10), UK (30), RO (2), CZ (nn), SI (4)

DE, FI, CH, LV, BG, NL, FR, HU, LT, LUX, ES, IS

Number of plants (country)

Number of plants approved although a deterioration of GES is expected

1 (AT), 9 (PT), 28 (UK), 2 (RO), 4 (SI)



WFD Article 4.7 – Step-by-step

- ▶ 4.7(a) Practicable steps to mitigate adverse impacts; (c) Justification of overriding public interest; (d) Better environmental options
- ▶ Few examples provided on methods / approaches to carry out the relevant assessments
- ▶ More **detailed approaches developed in certain countries**, e.g. AT, UK, PT



Thank you for listening.

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