



MODE 3



MODE 2



MODE 4

Designed with Dall-E3

ECODESIGN PREPARATORY STUDY FOR ELECTRIC VEHICLES CHARGERS – STAKEHOLDER MEETING – DRAFT TASK 4 & MORE SOURCING DATA

Paul Van Tichelen (VITO) -presenting

Paul Van Tichelen, Grietus Mulder, Tim Hettesheimer, Antoine Durand, Daniel Speth

25th June 2024

ecodesign-ev-charger.eu

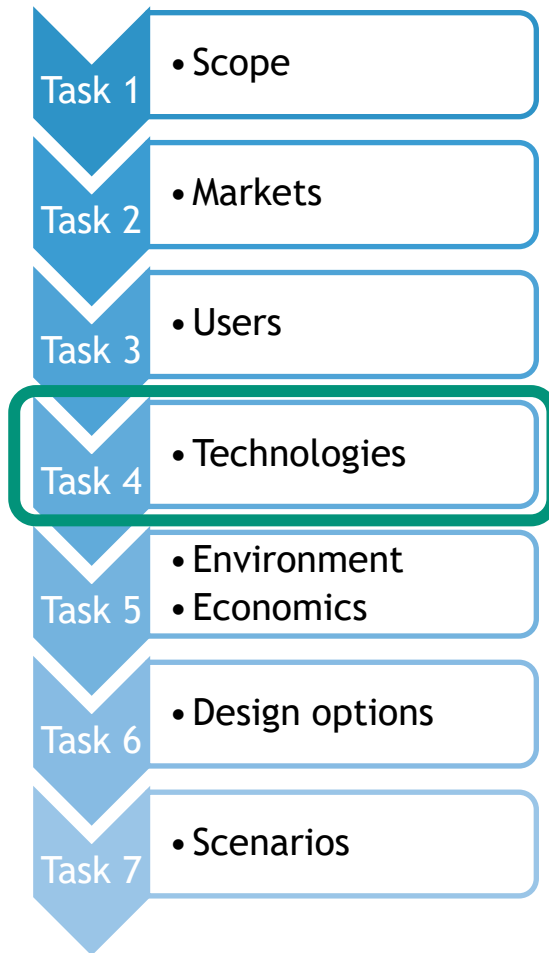


AGENDA

Ecodesign Preparatory Study for Electric Vehicles Chargers

- 9:30 10:00 Session opened
- 10:00 10:10 Welcome + tour de table Tim Hettesheimer Fraunhofer ISI
- 10:10 10:15 Introductory statement Eleftheria Vounouki European Commission
- 10:15 10:30 Methodology and objectives Antoine Durand Fraunhofer ISI
- 10:30 11:15 Preliminary results Task 1: Scope Grietus Mulder VITO
- 11:15 12:00 Preliminary results Task 2: Markets Tim Hettesheimer Fraunhofer ISI
- 12:00 13:00 *Lunch*
- 13:00 13:45 Preliminary results Task 3: Users Daniel Speth Fraunhofer ISI
- 13:45 14:30 Outlook on task 4-6: technologies Paul Van Tichelen VITO
- 14:30 15:00 Further proceeding, issues, closing Tim Hettesheimer Fraunhofer ISI

MEErP: Task 4



Objectives

- Description of the Technological Parameters
- Definition of the **Base-Case (= typical product on the market)** for the further assessment

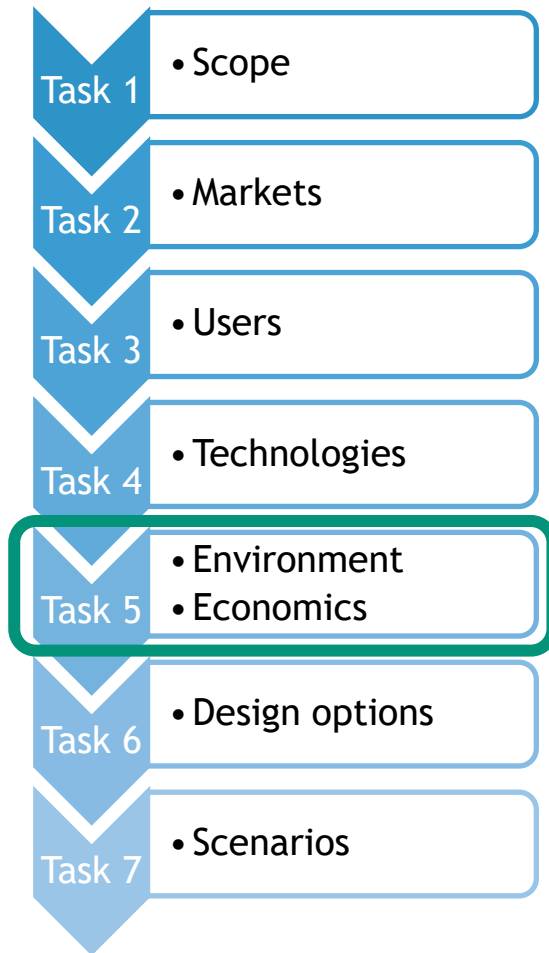
Subtasks

- Subtask 4.1: Technical Product Description
- Subtask 4.2: Production, Distribution and end-of-life
- Subtask 4.3: Recommendations

Output

- **Base Case definition**

MEErP: Task 5



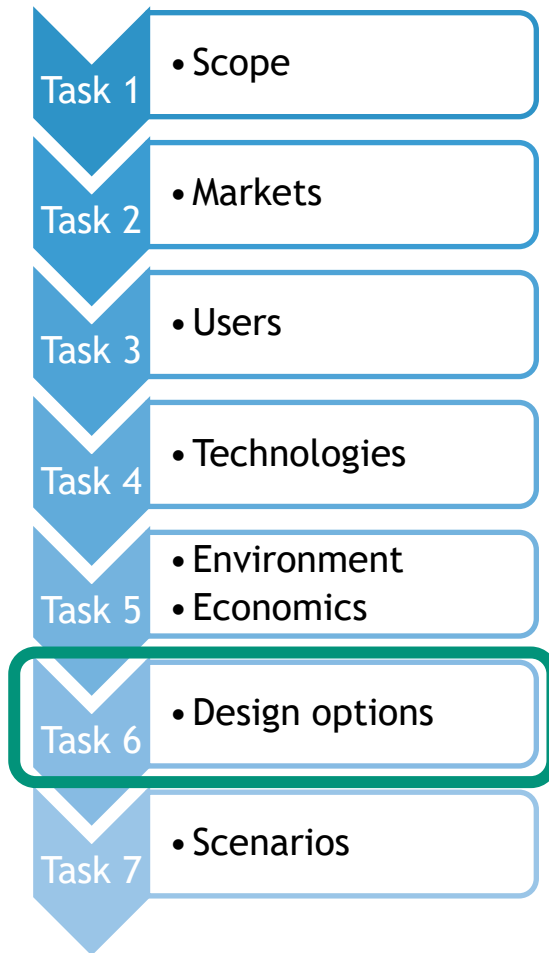
Objectives

- Calculation of environmental and economic impact of the base case product (with the EcoReport tool)
- Determination of reference cases for improvement options

Activities

- Subtask 5.1: **Product specific inputs (Bill of Materials : BoM)**
- Subtask 5.2: Base Case **Environmental Impact Assessment (LCA)**
- Subtask 5.3: Base Case **Life Cycle Cost for consumer**
- Subtask 5.4: Base Case **Life Cycle Cost for society**
- Subtask 5.5: **EU totals**

MEErP: Task 6



Objectives

- Identification and evaluation of design options for improvement

Subtasks

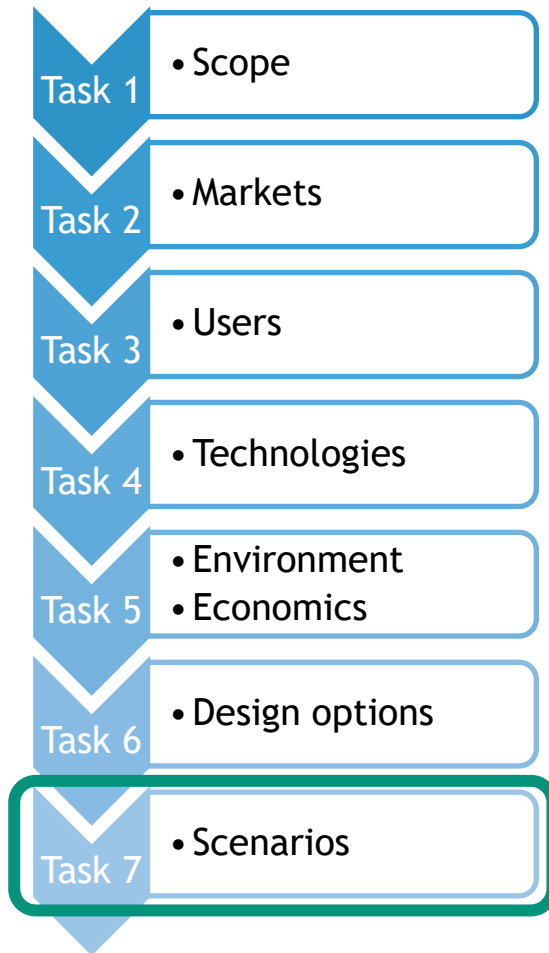
- Subtask 6.1: Identification of **design options** and assessment of their impacts
- Subtask 6.2: **Analysis of Costs**
- Subtask 6.3: Analysis of BAT and LLCC
- Subtask 6.4: Long Term Potential (BNAT) & System Analysis

BAT: Best Available Technology

BNAT: Best Not yet Available Technology

LLCC: Least Life Cycle Cost

MEErP: Task 7



Objectives

- Support the understanding of the potential impacts of regulation

Subtasks

- Subtask 7.1: **Policy Analysis**
- Subtask 7.2: **Scenario analysis** (unit stock/sale & environmental)
- Subtask 7.3: **Socio economic impact** analysis
- Subtask 7.4: **Sensitivity analysis**
- Subtask 7.5: Summary

TASK4 AND 5: CHOICE OF BASE CASES TO COLLECT AND PROCESS DATA

Base Cases: Preliminary ideas

	Base Case 1	Base Case 2	Base Case 3	Base Case 4	Base Case 5 ?
	Residential Charging - owner's car park	Residential Charging - shared or rented car park	Lantern Parker or Workplace Charging	Fast Charging M	Fast Charging N(>3,5T) N"
Abbreviation	SFHC	MFHC	LPWP	FCM	FCN
parking	SFH - own car parking	MFH or SFH rental property	workplace car parking or street parking	Public	Public
Typ. IEC mode	3	2	3	4	4
Accessibility	Private	Private	Limited Public or Public	Public	Public
Location	At home	At a closed or semi-public car park close to home	At workplace parking lot or on the street	At highway parking lot	At highway parking lot
Primary application	M1 (Passenger Cars)	M1 (Passenger Cars)	M1 (Passenger Cars) or N1 (Truck or Van <3,5T)	M1 (Passenger Cars) or N1 (Truck or Van <3,5T)	N3
Secondary functions	No extra features	No extra features?	WiFi, LTE, RFID, Display, MID Meter,...	WiFi, LTE, RFID, Display, MID Meter,...	WiFi, LTE, RFID, Display, MID Meter,...
Typ. Connection to EV	EVSE with cable & plug	Socket	Socket	EVSE with cable & plug	EVSE with cable & plug
Typ. Charging Power	Normal power (7,4kW-1ph)?	Normal power (7,4kW-1ph)?	Medium power (22 kW - 3ph)?	High power (>50 kW)	Ultra High power (>150 kW)

TASK 4/6

Preliminary ideas improvement design options

	Base Case 1	Base Case 2	Base Case 3	Base Case 4	Base Case 5
	Residential Charging - owner's car park	Residential Charging - shared or rented car park	Lantern Parker or Workplace Charging	Fast Charging M	Fast charging N
BAT 1 EFFICIENCY	Lowest idle & stand by loss	Lowest loss idle losses	Lowest loss idle and stand by losses	Lowest charger conversion loss	Lowest charger conversion loss
BAT 2 UPGRADE	Bi-directional AC upgrade?		modular and retrofittable controller	= BAU?	BAU?
BAT 3 REPAIR	repairable Relay?		Repair ??	= BAU?	BAU?
BAU -LIFE		> mode 3 with 5 years lifetime	Reduced life time (5y)	=BAU?	BAU?

TASK 4-6 INPUT DATA SOURCING

Available data sources

- PEP Ecopassport: <https://register.pep-ecopassport.org/pep/consult>

Note: **root input data is not available**, thus this will be sourced in addition?

- ADAC: <https://www.adac.de/rund-ums-fahrzeug/elektromobilitaet/laden/wallboxen/>

Note: does not give the root data, neither calculation procedures

- Energy star:
 - https://www.energystar.gov/products/ev_chargers
 - <https://www.energystar.gov/productfinder/product/certified-evse-ac-output/results>
 - <https://www.energystar.gov/productfinder/product/certified-evse-dc-output/results>

Note: only the power consumption data.

- Literature: see report.

TASK4, 5 & 6

Thank you!

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