EUROPEAN COMMISSION
Directorate-General for Mobility and Transport

Directorate B – Investment, Innovative & Sustainable Transport

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SUB-GROUP ON EUROPEAN UNION E-MOBILITY PUBLIC KEY INFRASTRUCTURE (PKI) ECOSYSTEM MANAGEMENT

SUB-GROUP TO THE GROUP OF EXPERTS ON ALTERNATIVE TRANSPORT FUELS

('THE SUSTAINABLE TRANSPORT FORUM')

TERMS OF REFERENCE

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1. BACKGROUND

The new Alternative Fuels Infrastructure Regulation (AFIR) sets out in Annex II technical specifications for the interoperability of recharging and refuelling points to be specified in European or international standards. Pursuant to Point 2.1. of AFIR Annex II, the Commission shall adopt relevant technical specifications regarding communication between the electric vehicle and the recharging point (vehicle-to-grid communication).

To ensure Union-wide interoperability of communications between the electric vehicle, the recharging infrastructure and the grid, in a safe and secure manner, it is necessary to establish a coordinated European governance and technical approach – the EU Public Key Infrastructure[1] ecosystem for e-mobility – that can facilitate neutral and trusted market accessibility of valid digital certificates. This includes the open market implementation of new solutions such as "plug and charge"[2], or smart and bidirectional charging services in the future, which depend on the set-up of a European trust framework laying out the governance and architecture rules for the reliable and secure verification of these certificates.

On 23 April 2015, the European Commission established the group of experts on alternative transport fuels ('the Sustainable Transport Forum' or 'the STF') by Decision C(2015)2583 (the 'STF establishment decision')[3]. By Commission Decision of 9 December 2020[4], the STF has been renewed until 31 December 2030 (the 'STF renewal decision'). The STF assists the

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[1] A PKI is a set of roles, policies, hardware, software and procedures used to create, manage, distribute, use, store and revoke digital certificates and manage public key encryption. A PKI uses cryptographic public and private keys. A public key is available to anyone who requests it and is issued by a trusted certificate authority (CA). The public key is used to verify the identity and authenticate third parties. The private key is kept secret by the owner and is used to generate digital signatures among other functions.

[2] To conduct a recharging session, all electric vehicle drivers need to do is simply connect the connector of a recharging point to their electric vehicle, and the recharging process will automatically start. The combination of both ad hoc payment (i.e., bank card payment) and contract-based payment (i.e., through plug and charge) will ensure electric vehicle drivers have easy and interoperable forms to use and pay for recharging their vehicles attending to their individuals preferences.

[3] Commission Decision C(2015)2583 final of 23 April 2015 on setting-up an expert group on alternative transport fuels ('the Sustainable Transport Forum').

[4] Commission Decision of 9 December 2020 on renewing the group of experts on alternative transport fuels ('the Sustainable Transport Forum') – C(2020)8535 final.

Commission with a view to facilitating the implementation of Directive 2014/94/EU[5] (now repealed) and its successor Regulation (EU) 2023/1804[6] on the deployment of alternative fuels infrastructure (AFIR) by providing technical expertise.

Under Article 5(2) of the STF establishment decision and Article 8 of the STF renewal decision, the European Commission's Directorate-General for Mobility and Transport ('DG MOVE') may set up sub-groups to prepare and support the work of the STF.

On this basis, DG MOVE has decided to set up a sub-group on European Union e-mobility Public Key Infrastructure (PKI) ecosystem management ('the sub-group').

The sub-group's main mission shall be to assist the Commission to set-up and operate the EU PKI ecosystem for e-mobility under a single European Certificate Trust List (CTL). The sub-group shall contribute to setting relevant technical procedures, operational rules and requirements to ensure the interoperability of plug and charge services over time, as well as to establish and maintain the technical and operational structures that govern the ecosystem.

The Commission has carried out extensive discussions in the last years as part of the STF expert group on this topipc. The STF has adopted industry-wide recommendations in July 2023[7] that reflect a market consensus for a hybrid governance framework. Under this framework, the Commission as neutral actor would ensure EU-wide accessibility of digital certificates, and the industry (market actors) would be responsible for offering related recharging services, including plug and chage, to end users in a secure and interoperable manner. In addition to this, the Commission (DG MOVE) tasked a support study to specifically explore the concrete technical and legal requirements for a corresponding implementation. This study was concluded in July 2023[8], in full alignment with the industry recommendations.

The sub-group's mission shall be developed on the basis of the governance and technical framework agreed and detailed in the abovementioned reports. More concretely, the governance model will be double-headed, where the Commission with the support of national authorities and market actors[9], will lead the governing level. At operational level, for interoperability purposes, the European Commission will be in charge of the Central European Elements (CEEs) that are responsible for the set-up of interconnections in a secure and interoperable manner through the CTL of the EU PKI ecosystem for e-mobility. Market actors will be responsible for managing and operating the certificates exchange enabling the offering of plug and charge services.

The architecture model will be based on a multiple Root Certificate Authority configuration where several PKI systems can provide PKI services to enable mobility service providers to deliver secure and interoperable plug and charge services to end users. The Commission should be responsible for the set-up and operation of the CTL via a Trust List Manager (TLM) within the EU PKI ecosystem for e-mobility. Importantly, the EU PKI ecosystem for

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[5] OJ L 307, 28.10.2014, p. 1, Directive 2014/94/EU of the European Parliament and of the Council of 22 October 2014 on the deployment of alternative fuels infrastructure.

[6] OJ L 234, 22.9.2023, p. 1, Regulation (EU) 2023/1804 of the European Parliament and of the Council of 13 September 2023 on the deployment of alternative fuels infrastructure, and repealing Directive 2014/94/EU

[7] https://op.europa.eu/en/publication-detail/-/publication/b7910659-276c-11ee-839d-01aa75ed71a1/language-en

[8] https://op.europa.eu/en/publication-detail/-/publication/0d84b5b6-6f03-11ee-9220-01aa75ed71a1/language-en/format-PDF/source-search

[9] namely PKI participants, PKI systems and certificate pools.

e-mobility architecture model and its implementation will be based on the application of EN ISO 15118-2:2016 and EN ISO 15118-20:2022 complemented with a CTL layer.

On that basis, with the support of the sub-group, the Commission aims to start the technical implementation of the governance and architecture framework, with an initial phase based on a voluntary approach, as of January 2025 under the technical leadership of the Joint Research Centre (JRC) located in Ispra (Italy).

The sub-group shall also function as a platform for exchange between stakeholders and the Commission on all matters related to the development of high quality recharging services for electric vehicles and end users. This also includes also the establishment of interoperability interactions with other PKI ecosystems outside the Union if relevant.

The sub-group will report to the STF. It will have to align with, receive inputs from and feed into the work foreseen under other existing the sub-groups, notably the sub-groups on governance and standards and data. Work programmes of relevant sub-groups should be aligned under the supervision of the Commission.

For any aspect not explicitly mentioned in these terms of reference, the sub-group shall operate in compliance with the terms of reference and rules of procedure of the STF and the Commission's horizontal rules on expert groups ('the horizontal rules')[10].

2. SUBJECT MATTER

The Sustainable Transport Forum sub-group on European Union e-mobility Public Key Infrastructure (PKI) ecosystem management ('the sub-group') is set up.

3. TASKS

The sub-group's tasks shall be:

a) to assist the Commission in the preparation of a general interoperability strategy applicable to the whole EU PKI ecosystem for e-mobility that is aligned with those regulatory aspects and standards established in the Union to this respect;

b) to assist the Commission in informing and steering the E-mobility PKI Ecosystem Operating Structure (EPEOS) to ensure continuous improvement and alignment of the operational requirements of the EU PKI ecosystem with the general strategy;

c) to assist the Commission in checking and assessing applications received by the E-mobility Point of Contact (EPOC) from candidate PKI systems, Root Certificate Authorities (Root CAs) and certificate pools to be accepted and included in the Certificate Trust List (CTL) of the EU PKI ecosystem for e-mobility;

d) to support the Commission in coordinating the accepted PKI systems and certificate pools that are part of the EU PKI ecosystem to ensure the proper functioning, interoperability and provisioning of plug and charge services in line with the architecture model;

e) to inform the Commission and Member States of first-hand problems and bottlenecks experienced in the offering of plug and charge services for electric vehicle recharging infrastructure;

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[10]   C(2016) 3301.

f) to assist, where necessary, the Commission in the preparation of ground for further legislative proposals or standardisation action.

4. MEMBERSHIP

1. The sub-group shall be composed of up to 60 members.

2. Members shall be organisations in the broad sense of the word, including companies, associations, Non-Governmental Organisations, trade unions, universities, research institutes, law firms and consultancies, working on electromobility and specifically active in the provision and/or offering of plug and charge services in the Union ('Type C members'), Member States' authorities, at national, regional or local level ('Type D members') and other public entities, such as third countries' authorities, including candidate countries' authorities, Union bodies, offices or agencies and international organisations ('Type E members'). The sub-group shall be composed of no more than 30 Type C members.

3. Organisations, Member States' authorities, organisations and other public entities shall nominate their representatives considering their suitability with regard to the purpose of the sub-group, and shall be responsible for ensuring that their representatives provide a high level of expertise. DG MOVE may refuse the nomination by an organisation of a representative if it considers this nomination inappropriate in the light of the requirements specified in the call for applications. In such case, the organisation concerned shall be asked to appoint another representative.

4. Member organisations who are no longer capable of contributing effectively to the sub-group's deliberations, who, in the opinion of DG MOVE, do not comply with the conditions set out in Article 339 of the Treaty on the Functioning of the European Union or who resign, shall no longer be invited to participate in any meetings of the sub-group and may be replaced for the remainder of their term of office.

5. SELECTION PROCESS

1. The selection of member organisations shall be carried out *via* a public call for applications, to be published on the Register of Commission expert groups and other similar entities ('the Register of expert groups'). In addition, the call for applications may be published through other means, including on dedicated websites. The call for applications shall clearly outline the selection criteria, including the required expertise and the interests to be represented in relation to the work to be performed. The minimum deadline for applications shall be four weeks.

2. Registration in the Transparency Register[11] is required in order for organisations to be appointed.

3. Member organisations of the sub-group shall be appointed by the the Director-General of DG MOVE from applicants with competence in the areas referred to in point 3 and who have responded to the call for applications.

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[11]   Transparency Register - Homepage (europa.eu)

4. Member organisations shall be appointed for a duration of 5 years. They shall remain in office until replaced or until the end of their term of office. Their term of office may be renewed.

5. In order to ensure continuity and the smooth functioning of the sub-group, DG MOVE may establish a reserve list of suitable candidates that may be used to appoint members' replacements. DG MOVE shall ask applicants for their consent before including their names on the reserve list.

6. Type D and E members shall be appointed for a duration of 5 years by the Director General of DG MOVE by direct invitation.

Done in Brussels, on 17 January 2024.