

EUROPEAN COMMISSION

Brussels, 11.8.2015 C(2015) 5572 final

PUBLIC VERSION

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# <u>Subject</u>: State Aid SA.38769 (2015/N) – The Netherlands The Green Deal for Publicly Accessible Charging Infrastructure Scheme

Sir,

I am pleased to inform you that the European Commission has assessed the Green Deal for Publicly Accessible Charging Infrastructure Scheme notified by the Kingdom of the Netherlands and decided to consider the aid to be compatible with the Treaty on the Functioning of the European Union (hereinafter referred to as the TFEU).

## 1. **PROCEDURE**

(1) Following pre-notification contacts, pursuant to Article 108(3) of the TFEU, on 8th May 2015, the Netherlands notified to the Commission its intention to set up a grant scheme to support the installation of electric vehicles charging posts.

## 2. DESCRIPTION OF THE AID MEASURE

# 2.1. Objective

(2) The objective of the scheme is to support the use of environmentally friendly electric vehicles in the Netherlands by developing a nationwide infrastructure of publicly accessible electric charging posts that is implemented at the local level. The design of electric charging posts and installation practices are still in a developmental stage. The costs of installing charging posts are therefore high at the moment; consequently business has been reluctant to invest in installing charging posts on a large scale.

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- (3) The Dutch authorities explained that, at the conclusion of the notified scheme in three years, the costs of installing electric charging posts will have fallen because of expected design and installation improvements. In addition to the high costs of installation, at the moment the turnover per charging unit is low due to the small number of electrical vehicles. These changes in the market are expected to make it commercially viable for operators to invest in new charging posts when required at the end of this scheme when public support will no longer be necessary.
- (4) The scheme will develop the supply chain consisting of publicly accessible charging posts, since the availability of a geographically comprehensive publicly accessible charging-post infrastructure is essential in order to be able to run electric vehicles.
- (5) The aid will be used by local governments to grant support for the installation of publicly accessible charging posts at the local level, which is expected to lead to the development of a network of publicly accessible charging posts throughout the Netherlands. The local government can choose to have a predetermined number of charging posts installed during a predetermined period to cover the entire territory of the city. In this case it will select the operator who will install and manage the number of charging posts required in this tender round by an open and transparent tender process. (see recital 23, 1<sup>st</sup> and 2<sup>nd</sup> bullet). The local government can also decide to grant subsidies on single charging posts. In that case the operator will be selected by the end user from an approved list of operators (see recital 23, 3<sup>rd</sup> bullet). This method is expected to be used mostly in smaller communities.

# 2.2. Legal basis, budget and duration

- (6) The legal basis for the aid is the Kaderwet EZ subsidies Act 1996 as amended in 2013.
- (7) The scheme was announced by the Government on 9<sup>th</sup> June 2015 but no commitment to any applicant will be made until the Commission has approved the scheme. The scheme will close on 1st July 2018, with a total budget of approximately EUR 33.7 million for the installation of publicly accessible electric charging posts.
- (8) The scheme will be partially funded by the Central Government of the Netherlands as well as by the budgets of local government and private contributions by local businesses and/or electric car owners. The Dutch authorities believe that the installation of more electric charging posts will lead to an increased sale of electric vehicles which will encourage local car dealers to support the measure. To obtain funding from the Central Government each municipal scheme must contribute at least EUR 500 per charging unit from the private sector (local businesses or electric car owners) and at least EUR 500 from the local governments' own resources. This may be reduced in year 2 and 3 if the funding cap is reduced (see recitals 21 and 23).
- (9) The Central Government will contribute a maximum of EUR 5.7 million. Contributions from local businesses and the private sector (local businesses and

electric car owners) will be EUR 6 million. In addition, local governments will contribute up to a maximum of EUR 22 million for the duration of the scheme.

(10) All local governments in the Netherlands applying the Green Deal for Publicly Accessible Charging Infrastructure Scheme will have access to the contribution of the Central Government.

# **2.3.** Scope of the notified measure

- The scheme consists of a country wide program installing publicly accessible (11)electric charging posts at local government levels throughout the Netherlands. Tenders to build and operate the posts under options and 1 2 as well as invitations for operators who will be invited to apply under option 3 (see recital 23) will occur at local level. The number of posts to be put out on tender will be based on an estimation of the number of posts that will be required based on data obtained by the local government via its city planning. Operators will bid for the number of installations proposed in the tender. The bids placed by participants to the tender shall express the installation costs per individual publicly accessible electric charging post.
- (12) The number of charging posts to be installed eventually will, however, depend on the number of local government-approved applications filed by local residents<sup>1</sup>. While there has to be an application by a resident for each individual charging post to be installed, this post will then be available for anyone to use as the aim of the scheme is to increase the number of posts available for public use. Local governments will not approve applications where the applicant would install a charging unit on his/her own premise. In such cases the applicants shall bear the cost of the installation themselves. Only one application for an individual charging post can be filed per property (even if it contains several households).
- (13) Given that costs of charging post operators are expected to decrease each year during the course of the scheme local governments can decide to run a tender each year to keep their contribution to a minimum.
- (14) The operator that wins the tender will be allowed to build and operate the posts for a period specified in the tender. According to the notification the applicant with the lowest bid (i.e. the lowest shortfall) wins the tender to install and operate the charging posts within the territory of the relevant municipality for the duration set in the tender. In practical terms, this means that for the installation of each individual charging post a single one off contribution to cover the shortfall of the aid applicant's business case against actual costs will be granted to the winner.
- (15) In the tender each operator will submit a business plan that sets out the costs of building a single publicly accessible charging post in the area of a certain municipality (including an operating cost/benefit balance for the first five years of operation). The business plan has to show the actual cost involved and what the shortfall would be. Together, the contributions by the Central Government, local

<sup>&</sup>lt;sup>1</sup> For example a tender may list 150 charging posts to be installed but only 100 applications have been received and approved. In such a case only 100 charging posts will receive aid from the notified scheme to be installed. This is a factor operators shall take into consideration when presenting their bids.

businesses/the electronic car owners and the local government have to cover the shortfall between the business case and the actual costs.

- (16) The tender will also set the maximum price the operator can charge the electric car users for using the charging posts.
- (17) The Central Government will determine a funding cap for each year, with the maximum expenditure the scheme will support for the installation of an individual charging post being EUR 5000 in year 1 (see below recital 21). It will itself contribute up to a maximum of EUR 900 to cover the shortfall in the business case for each newly installed charging post in year 1. The contributions from local businesses/the electric car owners will be a minimum of EUR 500 in year 1. If a higher contribution from local businesses/the car owners is raised, the amount paid by the local government will be reduced accordingly. The funding cap will be reviewed and will be reduced at the end of year 1 and again at the end of year 2 taking into account the development of the business case. The minimum contributions of local businesses may also be reduced in years 2 and/or 3 depending on the size of the funding cap reduction.
- (18) The local businesses will be asked to contribute to the installation program (see recital 9). If not enough money is raised, the electric car owners who apply for the posts will be asked to contribute. If no sufficient contribution is made by local businesses or electric car owners, the charging posts will not be installed with support from the notified scheme.
- (19) The maximum aid amounts granted by the scheme will be reviewed at the end of each year and can be reduced because the Dutch authorities consider that as the market opens up the cost of providing new charging posts will fall through reduced costs of research and development and larger scale production.
- (20) The Dutch authorities explain that payments from Central Government, the local government and local business/electric car owners cannot exceed the above mentioned EUR 5000 limit for each newly installed charging post in year 1.
- (21) Throughout years 1 and 2 the Dutch authorities will monitor the development in the submitted business cases and can amend the maximum expenditure that can be funded in years 2 and 3 if appropriate. Nonetheless, the Dutch authorities confirmed that the maximum aid amount per publicly accessible charging post to be granted under the scheme can never be higher than the aforementioned EUR 5000 throughout the duration of the scheme.

Table 1 below shows some examples of how electric charging posts might be funded during years 1, 2 and 3 of the scheme. The Dutch authorities expect the cost of installing the electric charging posts to fall in year 2 and 3 of the scheme. This would mean that the shortfall in the business case will be gradually reduced.

Year of committed installation	Contributions by Central Government	Contributions by Private businesses/electric car owners	Contributions by local government	Revenue from the use of the posts	Total
1	900	500 (minimum)	3600	1000	6000
2	600	500 (minimum)	1900	1000	4000
3	300	300 (minimum)	400	1000	2000

# Table 1 Financial scheme green deal publicly accessible charging infrastructure

**Source:** Dutch authorities

- (22) The scheme does not allow local governments to fund sums that are higher than those required to meet the shortfall of the business case.
- (23) The scheme allows 3 different types of operation to be funded. The maximum period of time the infrastructure may be operated by award from local government is ten years. At the end of the operating period ownership of the electric charging posts will be transferred to local government.
  - 1. Public Contract

An open and transparent tender is carried out, launched by the local government. The tender is awarded to the operator who bids the most favourable price per charging unit and quality. The contract will be for a limited time period and cover a limited number of publicly accessible electric charging posts to keep the cost down. If necessary, a further tender for an additional (limited) time period may be launched. These limitations will keep costs down and encourage competition. The operator is awarded the sole installation and operating right in the territory of the municipality. The contract sets the maximum agreed tariff an operator can charge to the consumer. The number of publicly accessible charging posts actually installed per tender will depend on the number of applications submitted by local electric car owners that are approved during the period of a given tender.

2. Concession

The operation is similar to that of option 1) above. The operator has however a greater freedom in choosing the type of charging post, optimising the operation of charging posts and in choosing the optimal charging rate. The number of charging posts actually installed will depend on the number of applications submitted by local electric car owners that are approved.

3. Direct grant

Smaller municipalities which do not want to launch a tender because of its costs could decide to support the installation of charging posts in this way. In such cases local governments will announce that they propose to stimulate the rollout of charging posts using this type of operation in newspapers, their website and other public sources. Charging post operators will be invited to apply if they are interested in building individual charging posts. Each bidder will include in his bid price the required subsidy. If a potential charging post operator meets the objective quality requirements set out in the call, his/her name will be added to a public list. Once the local government has agreed to the installation of a charging post the resident would contact operators from the list in order to get and compare bids (that include the charging tariffs). The winning bid receives the grant from the local government. In making their bids the charging post operators take into account the subsidy they expect to receive from the local government on the basis of the published rules regarding the direct grant. The competition between the bidding charging post operators will ensure that the grant is passed on to reduce the tariff charged to the end user.

## 2.4. Form of aid, eligible costs and aid intensity

- (24) The aid to install electric charging posts is provided in the form of a single direct grant to cover the shortfall in the business case.
- (25) The aid intensity will be a maximum of 100% of the eligible costs (shortfall). The shortfall is calculated as the total costs of the investment (taking into account any tax refund granted by the State, see annex 1) plus any amount stemming from the cost/benefit balance of the first five years of operation of a post. This calculation also includes the voluntary contributions provided by local businesses and electric car owners which reduce cost. No aid would be paid if the overall balance is positive. The Dutch authorities submitted a calculation to demonstrate such a funding gap (see annex 1).

## 2.5. Cumulation

(26) The Dutch authorities have confirmed that no cumulation with other types of aid will take place.

## **3.** Assessment of the aid

## **3.1.** State aid within the meaning of Article 107(1) TFEU

(27) Article 107(1) TFEU provides that "save as otherwise provided in the Treaty, any aid granted by a Member State or through State resources in any form whatsoever which distorts or threatens to distort competition by favouring certain undertakings or the production of certain goods shall, in so far as it affects trade between Member States, be incompatible with the internal market". The application of these cumulative conditions is examined below.

## Aid granted by a Member State or through State resources

(28) The Green Deal for Publicly Charging Infrastructure Scheme is funded by the Central Government, local government funds and private contributions raised and channelled through the local government. In addition, the grants for the construction and operation of the publicly accessible charging posts are awarded and carried out by the local governments. Therefore, the Commission considers that the subsidies stemming from the Central and local Government's own allocations are granted from State resources within the meaning of Article 107 (1) TFEU.

- (29) The Green deal for Publicly Charging Infrastructure Scheme can provide aid in 3 different ways (see recital 23). These different options relate to how the aid amounts can be selected and how the local authorities supervise operators managing the charging posts. All offer the same type of aid to the operator, an up-front grant to cover the funding gap. The Commission has therefore assessed the whole scheme in its entirety rather than the individual options.
- (30) The Commission considers, however, that, as opposed to a tax or levy, the nature of the contributions stemming from local businesses/the electric car owners is voluntary. Such contributions are essential to self-finance the scheme and, as such, are not imputable to the State. The Commission, therefore, takes the view that the voluntary contributions stemming from local businesses/the electric car owners which are used to finance the scheme cannot be considered as State resources.

Advantage favouring certain undertakings or the production of certain goods

- (31) Each individual grant is paid from funds controlled by the State to cover the shortfall in the business case of undertakings who have won the tender procedure to install and operate electric charging posts. Under normal market conditions, operators would (have to) increase their tariffs/remuneration to a level not covered by demand, or would simply not enter the market in the first place, which implies that the grant confers an advantage on operators by allowing them to offer their services.
- (32) As the advantage is only granted to the operators of charging posts who win the tender, or are selected by an individual electric car owner, the Commission concludes that it has a selective nature.

#### Distortion of competition and effect on trade between Member States

- (33) The undertakings are active in the sale or charging of electric vehicles and as such are subject to competition within the European Union. At the same time the charging posts under the scheme must be located in the Netherlands.
- (34) Service providers who wish to install new charging posts in other Member States where local governments do not have access to support under the notified (or a similar) scheme will be at a disadvantage when trying to start their operations. Given the increasing share of electric vehicles in the transport sector and the increasing demand for charging infrastructure across Europe, it is likely that the implementation of this scheme with public support will affect competition and the conditions of trade between Member States.

#### Conclusion

(35) As regards the Green Deal for Publicly Accessible Charging Infrastructure Scheme the Commission considers that the notified scheme grants a selective economic advantage to the operators, who successfully win a tender within the scheme. Therefore the Commission regards the notified measure as constituting State aid within the meaning of Article 107(1) of the TFEU insofar the subsidies stemming from the Central and local Government's own allocations are concerned. It is therefore necessary to consider whether the aid measure can be found to be compatible with the internal market.

# **3.2.** Legality of the aid measure

(36) As regards individual aid that may be granted under the scheme the Netherlands has fulfilled its obligation according to Article 108(3) TFEU by notifying the scheme before putting the aid into effect.

# **3.3.** Compatibility of the aid measure under Article 107 (3) c) TFEU

- (37) The Commission notes that the measure primarily aims to facilitate the roll out of publicly accessible charging posts for electric vehicles that, in the near and medium term, is unlikely to be financed by the market under regular commercial conditions through tariffs,. The Commission also notes that the measure does not fall under one of the existing frameworks and guidelines. In particular, whilst the Netherlands claims that the scheme should result in improved environmental protection, aid for such infrastructure does not fall within the scope of the Guidelines on State aid for environmental protection and energy 2014-2020 (EEAG)<sup>2</sup> as this type of infrastructure does not meet the definition of eligible energy infrastructures set out in point (31)a of the EEAG.
- (38) The Commission therefore considers that the assessment of the compatibility of the scheme with the internal market requires an assessment of the contribution of the measure to the development of low-emitting electric mobility and therefore needs to be based directly on the basis of Article 107(3)(c) TFEU which states that: "*The following may be considered to be compatible with the internal market:* (...) aid to facilitate the development of certain economic activities or of certain economic areas, where such aid does not adversely affect trading conditions to an extent contrary to the common interest (...)". This is in line with Decision SA.34719 (2013/N) The Netherlands Electric transportation scheme in Amsterdam<sup>3</sup>.
- (39) In order to be compatible under Article 107 (3)(c) TFEU the aid measure must pursue an objective of common interest in a necessary and proportionate way. In this regard the Commission considers it appropriate to assess the following questions
  - 1. Is the aid measure aimed at a well-defined objective of common interest (i.e. does the proposed aid addresses a market failure or has another objective of common interest)?
  - 2. Is the aid well designed to deliver the objective of common interest? In particular:
    - Is the aid measure an appropriate instrument, i.e. are there other, better-targeted instruments?

<sup>&</sup>lt;sup>2</sup> Guidelines on State aid for environmental protection and energy 2014-2020, OJ C 200/1, 28.06.2014.

<sup>&</sup>lt;sup>3</sup> C(2013) 7886; OJ JOCE C/69/2014

- Is there an incentive effect, i.e. does the aid change the behaviour of firms?
- Is the aid measure proportionate, i.e. could the same change in behaviour be obtained with less aid?
- 3. Are the distortions of competition and the effect on trade limited, so that the overall balance is positive?

## Objective of common interest

- (40) The aid measure has to aim at a well-defined objective of common interest. When an objective has been recognised by the EU as being in the common interest of the EU Member States, it follows that it is an objective of common interest.
- (41) Reducing the cost of installation of electric charging posts in the future and making it easier to charge electric vehicles will encourage vehicle users to purchase electric vehicles instead of the current petrol/diesel vehicles they use. Electrification of transport (electro mobility) is a priority in the Community Research Programme. It also figures prominently in the European Economic Recovery Plan<sup>4</sup> presented in November 2008, within the framework of the Green Car Initiative.
- (42) Consequently the Commission considers that the implementation of the notified scheme will have the benefit of reducing the emissions from vehicles and support the EU's long term climate goals of reducing  $CO_2$  emissions. It will also help the Netherlands meet their 2020 10% target for energy from renewable sources in transport set by the Renewables Directive on the promotion of the use of energy from renewable sources<sup>5</sup>.
- (43) This initiative is fully in line with Directive 2014/94/EU on the deployment of alternative fuels infrastructure<sup>6</sup>. This directive requires Member States to develop national policy frameworks for the market development of alternative fuels and their infrastructure. In particular in urban/suburban and other densely populated areas it obliges Member States to install an appropriate number of publicly accessible posts by end 2020.
- (44) Apart from the greenhouse gas reductions, more widespread use of electro mobility will significantly help in improving Air Quality. Urban pollution hot-spots are one the biggest challenges and emissions from transport are the main contributor (especially to NO<sub>2</sub> exceedance) in this regard. Even when the electricity is not fully produced from renewable energy sources, most of the benefits remain as the emissions stemming from generation are located far from the Air Quality hotspots and the emission sources power plants are more amenable to pollution control.

<sup>&</sup>lt;sup>4</sup> <u>COM(2008) 800, 26 November 2008</u>

<sup>&</sup>lt;sup>5</sup> Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC OJ L 140, 5.6.2009, p. 16–62 point 16

<sup>&</sup>lt;sup>6</sup> Directive Of the European Parliament and of the Council OJ 307/1 28.10.2014

### Appropriate Instrument

- (45) Currently, there are no binding targets or legislative obligation in force in the Netherlands concerning electric mobility. The market by itself has not brought forward similar projects. This is mainly due to the intrinsic economic risks, the high investment and operating costs and the limited expected revenues due to the very few electric vehicles currently available in the Netherlands. The aid is therefore intended to overcome the so-called chicken and egg problem (a market failure) whereby the lack of charging infrastructure hinders the uptake of electric vehicles and the lack of vehicles hinders the rollout of the charging infrastructure.
- (46) The Commission takes the view that the present scheme which is based on an open and transparent tender mechanism ensures the achievement of the goal to sufficiently cover the Netherlands with charging posts. Other types of assistance which do not involve direct grants would not incentivise the operators to work with local government to increase the number of electric charging posts in the Netherlands. The scheme also makes use of private finances to limit the contribution made from public finances and allows the terms of new tenders to be amended if appropriate in order to obtain the best possible price.
- (47) Consequently the Commission considers that the investment provided by the Green Deal for Publicly Accessible Charging Infrastructure Scheme is an appropriate instrument to fulfil the objectives of common interest identified above.

### Incentive Effect

- (48) The incentive effect is present if the aid changes the beneficiary's behaviour towards reaching the objective of common interest.
- (49) A significant funding gap exists between the costs of installing and operating an electric charging post and the revenues that can realistically be generated by it (see Annex 1). Without the grants provided by this scheme it is doubtful that operators would invest in installing and operating new electrical charging posts until the shortfall of the business case is closed.
- (50) The Commission notes that all possible operators will be able to take part in the tender process due to its transparent and open nature. This can influence the behaviour of all service providers who would otherwise not invest in the same field. Taking into account the above considerations, it can be concluded that the aid to the notified project has the necessary incentive effect.

## **Proportionality**

(51) The Green Deal for Publicly Accessible Charging Infrastructure scheme requires local governments to operate open and transparent tenders as part of the conditions of awarding a grant. The Central Government will fund part of the shortfall in the business case. Contributions from this source are limited, as the maximum amount the Central Government can pay is EUR 900 per publicly accessible charging post in year 1. The infrastructure funding cap will be reviewed at the end of year 1 and year 2. The data regarding cost of construction income etc. will be reviewed to reduce the funding cap as appropriate (see Table 1 above).

- (52) A transparent and open tender process will encourage operators to submit competitive tenders if they want to win the right to install and operate the electric charging posts in a specific geographic area. The size of the operational shortfall will encourage local governments to run open and transparent tenders in order to keep their cost to a minimum. The competitive bidding process involved in the tender process will incentivise bidders to make the lowest possible bid.
- (53) The Commission takes into account that the total support per publicly accessible charging unit under the notified scheme can never be more than EUR 5 000 in year 1. However it also acknowledges that as more electric charging posts are installed further research and developments in innovation will be expected to cause installation and operating costs to fall. At the same time, the cost of the service is also expected to fall due to economies of scale and the revenues are likely to increase as it is expected that the posts will be used more frequently with more people investing in electric cars. Therefore, for the present assessment the Commission attaches importance to the abovementioned caps which are reviewed at the end of each year in order to reduce the cap over the duration of the scheme. As regards the grants from the Central Government, the Commission considers that due to the maximum caps set in years 1, and its review in years 2 and 3 along with the requirement for a contribution from local businesses/electronic car owners, the aid is limited. This is also true for the aid from the local municipalities as the maximum caps are also expected to be reduced in year 2 or 3.
- (54) Furthermore, in order to minimise the amount they have to contribute to this scheme, local governments will have an incentive to monitor the tender process and design it to be as competitive as possible.
- (55) Bearing in mind the above, it is concluded that the State aid granted for the notified project is proportionate, as it has a number of built-in mechanisms to ensure that any aid is limited to the minimum necessary to achieve the objective of common interest identified above.

Distortion of competition and the balancing test

- (56) The objective of the proposed scheme is to correct the market failure present in an infant market. At the moment there is a shortfall in the business case to install new charging posts. This scheme will run for 3 years reducing the amount of support as the costs for entering the market decline.
- (57) Without such a scheme no or only a small number of new publicly accessible electric charging posts would be installed in a few areas where the business case allows them to be installed. The aid will therefore help to develop the new market for electric vehicles. On the other hand the expected tenders will force market players to compete for an aid grant per charging post thereby lowering the aid amount to the minimum.
- (58) Therefore, it can be concluded that possible distortions of competition and trade resulting from the envisaged aid measure are limited, and that the overall balance with regard to the objective of common interest is positive.

## Conclusion with regard to the compatibility of the measure

(59) In light of the above, the Commission considers that the notified aid scheme pursues an objective of common interest in a necessary and proportionate way and thus is compatible with the internal market on the basis of Article 107(3)(c) TFEU.

# 4. CONCLUSION

- (60) The Commission has accordingly decided to consider the Green Deal for Publicly Accessible Charging infrastructure scheme to be compatible with the internal market pursuant to Article 107(3)(c) TFEU.
- (61) The Commission reminds the Netherlands that, in accordance with Article 108 (3) TFEU, any plans to refinance, alter or change this scheme have to be notified to the Commission pursuant to the provisions of Commission Regulation (EC) No 794/2004 implementing Council Regulation (EC) No 659/1999 laying down detailed rules for the application of Article 108 of the EC Treaty<sup>7</sup>.
- (62) If this letter contains confidential information which should not be disclosed to third parties please inform the Commission within fifteen working days of the date of receipt. If the Commission does not receive a reasoned request by that deadline, you will be deemed to agree to the disclosure to third parties and to the publication of the full text of the letter in the authentic language on the Internet site:

http://ec.europa.eu/competition/elojade/isef/index.cfm.

Your request should be sent electronically to the following address: European Commission, Directorate-General Competition State Aid Greffe B-1049 Brussels <u>Stateaidgreffe@ec.europa.eu</u>

> Yours faithfully For the Commission

Margrethe VESTAGER Member of the Commission

<sup>7</sup> OJ L 140, 30.4.2004, p.1

Annex 1:
Business case calculation method for publicly accessible charging infrastructure <sup>1)</sup>

Costs/revenue type	Amount in EUR per charging unit	Amount in EUR per charging unit	
	End of 2014 (estimate)	End of 2014 (estimate)	
Source of figures:	E-laad <sup>2)</sup>	Market participants <sup>3)</sup>	
Hardware			
Charging unit purchase price	1,200	900-3 000	
Set-up costs	1 750	760-2 500	
Location determination	300	150-300	
Location set-up	400	150-700	
Connection costs	700	400-700	
Installation costs	350	60-800	
Operating costs (excl. energy), yearly	533	289-740	
Power supply connection	210	213-251	
Tax refund (MIA/VAMIL schemes)	-119	-119	
Communication	130	48-200	
Insurance	12	25-75	
Maintenance and repair	300	96-300	
Service to users	0	25-35	
Revenue from energy supply, yearly	138	324-220	
Number of kWh/day	5.4	12-5.11	
Purchase price per kWh (ex VAT)	0.06	0.06	
Sale price per kWh (ex VAT)	0.25	0.25-0.31	
Energy tax per kWh	0.11	0.11-0.13	
Cumulated operating balance after 5-year operating period. <sup>4)</sup>	-/- EUR 4 925	-/- EUR 1465 – -/-EUR 8110	

#### **Explanatory notes:**

- 1) The calculation method above provides an insight into the relevant costs and revenues in the business case for public charging infrastructure. For 2014, estimates are included for the cost and revenue factors concerned. Both the E-laad figures and the range for all market participants are shown as an example.
- 2) E-laad is the organisation set up by the network companies which installed most of the publicly accessible charging units up to the end of 2013.
- 3) These figures originate from independent research carried out by the Technical University of Eindhoven on the basis of anonymised survey data from market participants. The figures in this column indicate that there is still a wide margin in the business case of charging operators in this phase of the development of charging infrastructure. The E-laad figures appear to fall reasonably within this margin.
- 4) The cumulated operating balance is calculated over a 5-year operating period by summing the oneoff investment costs (hardware and set up costs) and 5 times the annual operating costs and revenues – in practice, both longer (7-10 years) and shorter (3 years) operating periods can occur.