

# **Assessment of Electric Vehicle and Battery Technology**

# Impacts of Electric Vehicles â∏ Deliverable 2

#### **Publication**

Report

#### Citation

Duleep, Gopalakrishnan; Huib van Essen; Bettina Kampman et. al. 2011: Assessment of Electric Vehicle and Battery Technology. Impacts of Electric Vehicles â□□ Deliverable 2. ICF/CE Delft/Ecologic Institute, Delft.

Duleep, Gopalakrishnan; Huib van Essen; Bettina Kampman et. al. 2011: Assessment of Electric Vehicle and Battery Technology. Impacts of Electric Vehicles â∏ Deliverable 2. ICF/CE Delft/Ecologic Institute, Delft.

#### Language

**English** 

### **Authorship**

Max Grþnig Gopalakrishnan Duleep (ICF) Huib van Essen (CE Delft) Bettina Kampman (CE Delft)

# **Funding**

European Commission, <u>Directorate-General Environment</u> (DG Environment), International

#### Year

2011

#### **Dimension**

68 pp.

### **Project**

**Environmental Impacts of Electric Vehicles** 

## **Project ID**

2328

#### **Table of contents**

Summary

- 1 Introduction
- 1.1 Introduction to the project
- 1.2 Structure of this report
- 2 Battery technology
- 2.1 Introduction
- 2.2 Battery technology to 2020
- 2.3 Post-2020 technology of lithium batteries
- 2.4 Effect of battery ageing
- 2.5 Recycling options and cost
- 2.6 Material use
- 2.7 Battery cost and weight summary
- 3 Other vehicle components
- 3.1 Introduction
- 3.2 Motor, inverter and controller
- 3.3 Power control unit
- 3.4 High voltage harness and battery safety
- 3.5 HVAC units
- 3.6 Regenerative brakes
- 4 Energy use projections for EV
- 4.1 Introduction
- 4.2 Energy use per kilometre of travel
- 4.3 Overview of energy use estimates of entire FEV and PHEV
- 4.4 Energy use of vehicle production
- 5 Noise, safety and maintenance
- 5.1 Introduction
- 5.2 Noise and safety impacts
- 5.3 Maintenance of EV/PHEV relative to conventional vehicles
- 6 Projections of the EV market share
- 6.1 Overview of existing forecasts of market shares
- 6.2 Own projection of market shares
- 7 Conclusions of the EV technology analysis
- 7.1 Battery technology to 2030
- 7.2 Other major components
- 7.3 Safety issues
- 7.4 Vehicle production energy use and GHG emissions, life cycle issues
- 7.5 Market forecast

References

# Keywords

**Climate** 

**Energy** 

EU

**Evaluation** 

**Mobility** 

Transport, Climate, EU Environment, Policy Assessment, Greenhouse Gases, CO2-Emissions, Electric Vehicles, Plug-In Hybrid Electric Vehicles, Market Penetration, EU-27 Europe

**Source URL:** https://www.ecologic.eu/13512