

QUESTIONNAIRE TO SUPPORT THE DEVELOPMENT OF THE EVE REFERENCE GUIDE

Introduction:

The Electric Vehicle and Environment (EVE) Informal Working Group is mandated by the WP.29 to develop an EV Regulatory Reference Guide (Guide).

The scope of this Guide covers all types of road vehicles (motorcycles, passenger cars, light, medium and heavy-duty vehicles) with electrical propulsion, including battery electric vehicles (BEV), hybrid electric vehicles (HEV) and plug-in hybrids (PHEV). The Terms of Reference of the EVE IWG can be found at: <https://www2.unece.org/wiki/display/trans/EVE+2nd+Session>

Your input to the attached Questionnaire is critical to the delivery of this activity. We are counting on your support to complete this questionnaire by **March 11, 2013**. **Send your completed questionnaire electronically** to the EVE Secretary, Stephane.Couroux@ec.gc.ca. A summary of the information gathered will be presented at the EVE-05 session to be held April 11-12, 2013 in Tokyo, Japan.

Should you have any questions, or concerns, please do not hesitate to contact the EVE Secretary. Should you prefer to set-up a phone interview to complete the Questionnaire, please let the EVE Secretary know and we will set set-up a time.

Thank you for your contribution to this work.

The EVE Leadership Team

Background:

Requirements in the Guide will be organized by *attribute*, which is a characteristic, activity or requirement related to EVs and the environment; an example of an EV attribute is 'electrified vehicle range'. This approach was agreed upon by EVE IWG members and was taken to minimize confusion in interpretation of wording, such as regulation, legislation, etc. Each attribute is defined, and definitions established in Gtrs (2, 4, 10, 11), under development in other WP.29 working groups (EVS, VPSD, WLPT, HDH), found in WP.29 documentation (R.E.3, S.R.1), and established by other organizations (ANSI, ISO, IA-HEV) were scanned for relevance to this work and are used where appropriate.

During the 3rd EVE IWG meeting in November 2012, it was agreed to use a questionnaire to seek information on attributes from Contracting Parties and other WP.29 working groups for input into the Guide. Although in the questionnaire each attribute is defined, it is recognized that Contracting Parties and other relevant WP.29 working groups may have slightly different definitions. They are encouraged to contribute information for each attribute regardless of the exact definition. The structure of the questionnaire was available for review by EVE members and finalized at the 4th EVE IWG meeting.

Other stakeholders, like vehicle manufacturers, will be given the opportunity to provide comments on drafts of the Guide once information is compiled.

Instructions: For *each* EV Attribute presented below, please provide answers to the questions. We realize there may be overlap in requirements for multiple attributes; if this is the case, include information in each attribute even if repetitive.

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| 1. Electrified Vehicle Attribute: Electrified vehicle range |
| Attribute Definition: The maximum distance an electric vehicle can travel using only battery power. In the case of plug-in electric vehicles (PHEV) also indicate the “total range”. Vehicle range determination can include a specific drive cycle, test procedures and vehicle preconditioning. Please specify “end of test condition” used. Please include these elements in your answer, if applicable. |
| Question 1. Requirements: Do you have requirements (voluntary, regulatory, etc.) in regards to the attribute? The term ‘requirements’ is broad and can refer to any practise, regulation, legislation, code, and/or standard. Please keep in mind the different vehicle types (i.e.: passenger cars, heavy-duty trucks, motorcycles, etc. and HEVs, PHEV, BEVs), specifying requirements by vehicle type for Attribute X if appropriate. If yes, answer the questions below. If no, move onto answering the questions for the other attributes. |
| a. Describe the requirements, stating its objective and goal. Indicate if the requirement is established/active or under development. If the requirement is under development, what is the expected timeline for its adoption? Finally, if a definition for the attribute is included in the requirement, please provide this information. |
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| b. Are any standards (i.e.: SAE, ISO, UL, national, international, voluntary, industry etc.) referenced in the requirements? If yes, list the standards referenced. |
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| c. Where are these requirements stipulated (i.e.: Law, Act, other,...)? |
| ANSWER: |
| d. Describe who is responsible for implementing the requirements (i.e.: government agency, other,...)? |
| ANSWER: |
| e. Are there variations in these requirements within your jurisdiction? This could include state, municipal or other regional requirements. |
| ANSWER: |
| f. Is there any other relevant information you would like to include about the attribute and related requirements? |
| ANSWER: |

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| 2. Electrified Vehicle Attribute: Energy consumption/efficiency |
| Attribute Definition: Energy required to travel X km in standardized conditions. Energy consumption/efficiency determination can include a specific drive cycle, test procedures and vehicle preconditioning. |
| Question 1. Requirements: Do you have requirements (voluntary, regulatory, etc.) in regards to the attribute? The term ‘requirements’ is broad and can refer to any practise, regulation, legislation, code, and/or standard. Please keep in mind the different vehicle types (i.e.: passenger cars, heavy-duty trucks, motorcycles, etc. and HEVs, PHEV, BEVs), specifying requirements by vehicle type for Attribute X if appropriate. If yes, answer the questions below. If no, move onto answering the questions for the other attributes. |
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| e. Are there variations in these requirements within your jurisdiction? This could include state, municipal or other regional requirements. |
| ANSWER: |
| f. Is there any other relevant information you would like to include about the attribute and related requirements? |
| ANSWER: |

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| 3. Electrified Vehicle Attribute: Electrified Vehicle driver-user information |
| Attribute Definition: Standardized symbols for system warnings, charge systems, etc. |
| Question 1. Requirements: Do you have requirements (voluntary, regulatory, etc.) in regards to the attribute? The term 'requirements' is broad and can refer to any practise, regulation, legislation, code, and/or standard. Please keep in mind the different vehicle types (i.e.: passenger cars, heavy-duty trucks, motorcycles, etc. and HEVs, PHEV, BEVs), specifying requirements by vehicle type for Attribute X if appropriate. If yes, answer the questions below. If no, move onto answering the questions for the other attributes. |
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| ANSWER: |

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| 4. Electrified Vehicle Attribute: Electrified Vehicle recycling and re-use (excluding the battery) |
| Attribute Definition: Requirements for recycling and/or reusing vehicle components and/or electric motors. |
| Question 1. |
| Requirements: Do you have requirements (voluntary, regulatory, etc.) in regards to the attribute? |
| The term 'requirements' is broad and can refer to any practise, regulation, legislation, code, and/or standard. Please keep in mind the different vehicle types (i.e.: passenger cars, heavy-duty trucks, motorcycles, etc. and HEVs, PHEV, BEVs), specifying requirements by vehicle type for Attribute X if appropriate. |
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| f. Is there any other relevant information you would like to include about the attribute and related requirements? |
| ANSWER: |

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| 5. Electrified Vehicle Attribute: Vehicle labeling |
| Attribute Definition: Requirements for vehicle labelling, including the drive cycle and test procedure used to obtain information for the label. Labels may indicate, but are not limited to, fuel efficiency, emissions, range, total battery capacity (kWh), cost, etc. |
| Question 1. Requirements: Do you have requirements (voluntary, regulatory, etc.) in regards to the attribute? The term ‘requirements’ is broad and can refer to any practise, regulation, legislation, code, and/or standard. Please keep in mind the different vehicle types (i.e.: passenger cars, heavy-duty trucks, motorcycles, etc. and HEVs, PHEV, BEVs), specifying requirements by vehicle type for Attribute X if appropriate. If yes, answer the questions below. If no, move onto answering the questions for the other attributes. |
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| f. Is there any other relevant information you would like to include about the attribute and related requirements? |
| ANSWER: |

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| 6. Electrified Vehicle Attribute: Battery performance |
| Attribute Definition: Methods and conditions for testing and measuring battery power delivery capability, energy storage capacity, battery charge, etc. |
| Question 1. Requirements: Do you have requirements (voluntary, regulatory, etc.) in regards to the attribute? Indicate battery technology and number of cycles completed on the battery if applicable. The term 'requirements' is broad and can refer to any practise, regulation, legislation, code, and/or standard. Please keep in mind the different vehicle types (i.e.: passenger cars, heavy-duty trucks, motorcycles, etc. and HEVs, PHEV, BEVs), specifying requirements by vehicle type for Attribute X if appropriate. If yes, answer the questions below. If no, move onto answering the questions for the other attributes. |
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| ANSWER: |
| f. Is there any other relevant information you would like to include about the attribute and related requirements? |
| ANSWER: |

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| 7. Electrified Vehicle Attribute: Battery durability |
| Attribute Definition: Methods and conditions for determining average life cycle count, shock and vibration resistance, temperature, etc. |
| Question 1. Requirements: Do you have requirements (voluntary, regulatory, etc.) in regards to the attribute? Indicate battery technology and number of cycles completed on the battery if applicable. The term 'requirements' is broad and can refer to any practise, regulation, legislation, code, and/or standard. Please keep in mind the different vehicle types (i.e.: passenger cars, heavy-duty trucks, motorcycles, etc. and HEVs, PHEV, BEVs), specifying requirements by vehicle type for Attribute X if appropriate. If yes, answer the questions below. If no, move onto answering the questions for the other attributes. |
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| f. Is there any other relevant information you would like to include about the attribute and related requirements? |
| ANSWER: |

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| 8. Electrified Vehicle Attribute: Battery recycling |
| Attribute Definition: Battery material recycling standards. |
| Question 1. Requirements: Do you have requirements (voluntary, regulatory, etc.) in regards to the attribute? Indicate battery technology if applicable. The term 'requirements' is broad and can refer to any practise, regulation, legislation, code, and/or standard. Please keep in mind the different vehicle types (i.e.: passenger cars, heavy-duty trucks, motorcycles, etc. and HEVs, PHEV, BEVs), specifying requirements by vehicle type for Attribute X if appropriate. If yes, answer the questions below. If no, move onto answering the questions for the other attributes. |
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| f. Is there any other relevant information you would like to include about the attribute and related requirements? |
| ANSWER: |

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| 9. Electrified Vehicle Attribute: Battery re-use (post-mobility) |
| Attribute Definition: Alternate uses for batteries after their useful life in vehicles. |
| Question 1. |
| Requirements: Do you have requirements (voluntary, regulatory, etc.) in regards to the attribute? |
| The term 'requirements' is broad and can refer to any practise, regulation, legislation, code, and/or standard. Please keep in mind the different vehicle types (i.e.: passenger cars, heavy-duty trucks, motorcycles, etc. and HEVs, PHEV, BEVs), specifying requirements by vehicle type for Attribute X if appropriate. |
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| ANSWER: |
| f. Is there any other relevant information you would like to include about the attribute and related requirements? |
| ANSWER: |

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| 10. Electrified Vehicle Attribute: On-board charging system |
| Attribute Definition: Specifications and requirements for on-board charging system, including voltage, current, port for AC and/or DC power, etc. |
| Question 1. Requirements: Do you have requirements (voluntary, regulatory, etc.) in regards to the attribute? The term 'requirements' is broad and can refer to any practise, regulation, legislation, code, and/or standard. Please keep in mind the different vehicle types (i.e.: passenger cars, heavy-duty trucks, motorcycles, etc. and HEVs, PHEV, BEVs), specifying requirements by vehicle type for Attribute X if appropriate. If yes, answer the questions below. If no, move onto answering the questions for the other attributes. |
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| ANSWER: |
| f. Is there any other relevant information you would like to include about the attribute and related requirements? |
| ANSWER: |

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| 11. Electrified Vehicle Attribute: Off-board charging standard related to the vehicle |
| Attribute Definition: Specifications and requirements for off-board charging system, including port for DC power, battery communication interface/battery management system communication interface, etc. |
| Question 1. Requirements: Do you have requirements (voluntary, regulatory, etc.) in regards to the attribute? The term 'requirements' is broad and can refer to any practise, regulation, legislation, code, and/or standard. Please keep in mind the different vehicle types (i.e.: passenger cars, heavy-duty trucks, motorcycles, etc. and HEVs, PHEV, BEVs), specifying requirements by vehicle type for Attribute X if appropriate. If yes, answer the questions below. If no, move onto answering the questions for the other attributes. |
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| f. Is there any other relevant information you would like to include about the attribute and related requirements? |
| ANSWER: |

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| 12. Electrified Vehicle Attribute: Wireless charging |
| Attribute Definition: Requirements and standards for wireless charging. |
| Question 1. |
| Requirements: Do you have requirements (voluntary, regulatory, etc.) in regards to the attribute? |
| The term 'requirements' is broad and can refer to any practise, regulation, legislation, code, and/or standard. Please keep in mind the different vehicle types (i.e.: passenger cars, heavy-duty trucks, motorcycles, etc. and HEVs, PHEV, BEVs), specifying requirements by vehicle type for Attribute X if appropriate. |
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| ANSWER: |

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| 13. Electrified Vehicle Attribute: Vehicle as electricity supply |
| Attribute Definition: Vehicle-related specifications and requirements for transferring electricity from EVs to the grid. |
| Question 1. Requirements: Do you have requirements (voluntary, regulatory, etc.) in regards to the attribute? The term 'requirements' is broad and can refer to any practise, regulation, legislation, code, and/or standard. Please keep in mind the different vehicle types (i.e.: passenger cars, heavy-duty trucks, motorcycles, etc. and HEVs, PHEV, BEVs), specifying requirements by vehicle type for Attribute X if appropriate. If yes, answer the questions below. If no, move onto answering the questions for the other attributes. |
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| ANSWER: |

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| 14. Electrified Vehicle Attribute: Regulatory incentives |
| Attribute Definition: Legal requirements that contain an incentive for deployment of electric vehicles. The term 'legal requirements' is broad and can refer to any regulation, legislation, code, and/or standard that is rooted in law |
| Question 1. Requirements: Do you have requirements (voluntary, regulatory, etc.) in regards to the attribute? The term 'requirements' is broad and can refer to any practise, regulation, legislation, code, and/or standard. Please keep in mind the different vehicle types (i.e.: passenger cars, heavy-duty trucks, motorcycles, etc. and HEVs, PHEV, BEVs), specifying requirements by vehicle type for Attribute X if appropriate. If yes, answer the questions below. If no, move onto answering the questions for the other attributes. |
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| ANSWER: |

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| 15. Electrified Vehicle Attribute: Financial incentives |
| Attribute Definition: Financial support provided by the government to vehicle manufacturers, businesses, organizations, and/or consumers for the purchase of an electric vehicle. Ensure to describe the terms of the financial support, specifying (if appropriate) where an incentive is applied, i.e. manufacturers, sales, infrastructure, etc. |
| Question 1. Requirements: Do you have requirements (voluntary, regulatory, etc.) in regards to the attribute? The term 'requirements' is broad and can refer to any practise, regulation, legislation, code, and/or standard. Please keep in mind the different vehicle types (i.e.: passenger cars, heavy-duty trucks, motorcycles, etc. and HEVs, PHEV, BEVs), specifying requirements by vehicle type for Attribute X if appropriate. If yes, answer the questions below. If no, move onto answering the questions for the other attributes. |
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| ANSWER: |

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| 16. Electrified Vehicle Attribute: Consumer awareness |
| Attribute Definition: Education and outreach activities supported by the government to increase awareness about electric vehicles. |
| Question 1. Requirements: Do you have requirements (voluntary, regulatory, etc.) in regards to the attribute? The term 'requirements' is broad and can refer to any practise, regulation, legislation, code, and/or standard. Please keep in mind the different vehicle types (i.e.: passenger cars, heavy-duty trucks, motorcycles, etc. and HEVs, PHEV, BEVs), specifying requirements by vehicle type for Attribute X if appropriate. If yes, answer the questions below. If no, move onto answering the questions for the other attributes. |
| a. Describe the requirements, stating its objective and goal. Indicate if the requirement is established/active or under development. If the requirement is under development, what is the expected timeline for its adoption? Finally, if a definition for the attribute is included in the requirement, please provide this information. |
| ANSWER: - Description: - Objective and goal: - Established/active or under development: - If under development, timeline for adoption: - Attribute definition found in the requirement: |
| b. Are any standards (i.e.: SAE, ISO, UL, national, international, voluntary, industry etc.) referenced in the requirements? If yes, list the standards referenced. |
| ANSWER: |
| c. Where are these requirements stipulated (i.e.: Law, Act, other,...)? |
| ANSWER: |
| d. Describe who is responsible for implementing the requirements (i.e.: government agency, other,...)? |
| ANSWER: |
| e. Are there variations in these requirements within your jurisdiction? This could include state, municipal or other regional requirements. |
| ANSWER: |
| f. Is there any other relevant information you would like to include about the attribute and related requirements? |
| ANSWER: |

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| 17. Electrified Vehicle Attribute: Government purchasing |
| Attribute Definition: Requirements and/or financial incentives within government operations incentivizing the purchase and use of electric vehicles. |
| Question 1. Requirements: Do you have requirements (voluntary, regulatory, etc.) in regards to the attribute? The term 'requirements' is broad and can refer to any practise, regulation, legislation, code, and/or standard. Please keep in mind the different vehicle types (i.e.: passenger cars, heavy-duty trucks, motorcycles, etc. and HEVs, PHEV, BEVs), specifying requirements by vehicle type for Attribute X if appropriate. If yes, answer the questions below. If no, move onto answering the questions for the other attributes. |
| a. Describe the requirements, stating its objective and goal. Indicate if the requirement is established/active or under development. If the requirement is under development, what is the expected timeline for its adoption? Finally, if a definition for the attribute is included in the requirement, please provide this information. |
| ANSWER: - Description: - Objective and goal: - Established/active or under development: - If under development, timeline for adoption: - Attribute definition found in the requirement: |
| b. Are any standards (i.e.: SAE, ISO, UL, national, international, voluntary, industry etc.) referenced in the requirements? If yes, list the standards referenced. |
| ANSWER: |
| c. Where are these requirements stipulated (i.e.: Law, Act, other,...)? |
| ANSWER: |
| d. Describe who is responsible for implementing the requirements (i.e.: government agency, other,...)? |
| ANSWER: |
| e. Are there variations in these requirements within your jurisdiction? This could include state, municipal or other regional requirements. |
| ANSWER: |
| f. Is there any other relevant information you would like to include about the attribute and related requirements? |
| ANSWER: |