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State of Minnesota
HOUSE OF REPRESENTATIVES

**EIGHTY-SIXTH
SESSION**

HOUSE FILE No. 2834

February 11, 2010
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The bill was read for the first time and referred to the Committee on Finance

1.1 A bill for an act
1.2 relating to energy; requiring public utilities commission to open docket to
1.3 examine integration of electric vehicles into Minnesota's electricity grid;
1.4 requiring a report.

1.5 BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF MINNESOTA:

1.6 Section 1. **PUBLIC UTILITIES COMMISSION DOCKET ON IMPACTS OF**
1.7 **ELECTRIC VEHICLES.**

1.8 (a) By July 1, 2010, the commission shall open a docket to examine issues
1.9 surrounding the impacts that growing market penetration of plug-in hybrid electric
1.10 vehicles and battery electric vehicles and the installation of electric vehicle recharging
1.11 infrastructure will have on utility operations, the electricity distribution system, rates, and
1.12 utility regulation in this state. The docket must address the impacts on a utility's operations
1.13 of bi-directional electric vehicle charging stations, required under Laws 2009, chapter
1.14 134, section 6, that allow utilities to draw upon electricity stored in vehicle batteries
1.15 when vehicles are idle, and to replace it later. The commission shall require information
1.16 from the five largest public utilities, municipal utilities, and distribution cooperatives,
1.17 based on retail electricity sales, and solicit input from other electric utilities, ratepayers,
1.18 environmental organizations, electric vehicle manufacturers and advocates, and others
1.19 on the following issues:

1.20 (1) how various levels of increased load from electric vehicles will affect (i)
1.21 baseload operations; (ii) peaking operations; and (iii) the provision of ancillary services,
1.22 based on different levels of electric vehicle market penetration ranging from one to 30
1.23 percent or more;

2.1 (2) how electric vehicles and electric vehicle infrastructure can be efficiently
2.2 incorporated into a utility's distribution system, how Smart Grid technologies can facilitate
2.3 this integration, and what technical barriers may impede integration;

2.4 (3) the extent to which a utility's access via a bi-directional charging system to
2.5 the geographically dispersed energy storage network provided by advanced batteries in
2.6 electric vehicles may impact the rate of development of solar and wind resources;

2.7 (4) mechanisms that can be employed to minimize the strain placed on the electric
2.8 distribution system by many electric vehicles recharging simultaneously, such as
2.9 time-of-use rates, or utility control of recharging times;

2.10 (5) potential changes in a utility's business model, including deploying or owning
2.11 vehicle charging stations, providing battery exchange services, or owning and leasing
2.12 batteries to electric vehicle owners;

2.13 (6) each participating utility's systemwide fuel profile, which is the proportion of
2.14 electricity generated or purchased from coal, natural gas, and renewable sources, during
2.15 peak and off-peak periods and showing seasonal variabilities;

2.16 (7) regulatory issues posed by the significant market penetration by plug-in hybrid
2.17 and electric battery vehicles, including the reselling of electricity by owners of recharging
2.18 stations; and

2.19 (8) other issues the commission deems relevant.

2.20 (b) The docket must be closed by December 31, 2010.

2.21 (c) By February 15, 2011, the commission shall submit a report to the chairs and
2.22 ranking minority members of the senate and house of representatives committees with
2.23 primary jurisdiction over energy policy that contains the following information:

2.24 (1) a summary of issues raised by utilities and other participants in the docket,
2.25 including a list of technical, regulatory, and financial barriers that may inhibit the smooth
2.26 integration of electric vehicles and electric vehicle infrastructure into Minnesota's electric
2.27 grid; and

2.28 (2) a list of potential actions that utilities, the commission, and the legislature can
2.29 take to enable Minnesota to fully realize the opportunities that the integration of electric
2.30 vehicles and electric vehicle infrastructure into Minnesota's electric grid presents, in
2.31 order to:

2.32 (i) promote the convenient use of electric vehicles;

2.33 (ii) minimize the need for new generating capacity to meet the additional load;

2.34 (iii) meet the state's energy goals under sections 216B.1691, subdivision 2a,
2.35 216C.05, subdivision 2, and 216H.02, subdivision 1; and

2.36 (iv) minimize the cost burden on ratepayers and taxpayers.

3.1 The report must address the economic impacts on ratepayers and taxpayers of
3.2 implementing each of the potential actions.

3.3 **EFFECTIVE DATE.** This section is effective the day following final enactment.