

Senator Vickerman introduced—

S. F. No. 462 Referred to the Committee on Agriculture, Veterans & Gaming

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A bill for an act

relating to agriculture; providing for additional periodic payments for the taking of agricultural land for transmission of electricity; amending Minnesota Statutes 2004, section 116C.63, by adding a subdivision.

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

Section 1. Minnesota Statutes 2004, section 116C.63, is amended by adding a subdivision to read:

Subd. 3a. [AGRICULTURAL LAND; ADDITIONAL PAYMENTS.] In eminent domain proceedings related to transmission routes for the acquisition of real property that is homestead or nonhomestead agricultural land that is or could be used for farming, the acquiring utility must, in addition to any other payments, make the payments required by this subdivision. The utility must perpetually and annually pay royalties to the owner of the fee or contract for deed vendee, if applicable. The royalty must be based on the amount of electricity carried on the lines placed on the route. The royalties do not attach to the land but are personal property of the fee owner or contract for deed vendee.

Sec. 2. [EFFECTIVE DATE.]

Section 1 is effective August 1, 2005, and applies to condemnation awards filed on or after that date.

1 Senator moves to amend S.F. No. 462 as follows:

2 Delete everything after the enacting clause and insert:

3 "Section 1. Minnesota Statutes 2004, section 116C.63,
4 subdivision 3, is amended to read:

5 Subd. 3. [PAYMENT.] In addition to the payments required
6 by subdivision 3a, and unless the parties otherwise agree, the
7 amount the owner shall receive for the property is one and a-
8 half times the estimated market value of the property acquired
9 as contained in the most recent property tax statement. If the
10 tax statement applies to a larger parcel than the property
11 acquired, the estimated market value must be multiplied by a
12 percentage equal to the percentage that the land area of the
13 easement acquired is of the area of the larger parcel. When
14 such property is acquired by eminent domain proceedings or
15 voluntary purchase and the amount the owner shall receive for
16 the property is finally determined, the owner who is entitled to
17 payment may elect to have the amount paid in not more than ten
18 annual installments, with interest on the deferred installments,
19 at the rate of eight percent per annum on the unpaid balance, by
20 submitting a written request to the utility before any payment
21 has been made. After the first installment is paid the
22 petitioner may make its final certificate, as provided by law,
23 in the same manner as though the entire amount had been paid.

24 Sec. 2. Minnesota Statutes 2004, section 116C.63, is
25 amended by adding a subdivision to read:

26 Subd. 3a. [AGRICULTURAL LAND; ADDITIONAL PAYMENTS.] A
27 utility acquiring an easement to route high voltage transmission
28 lines over real property that is homestead or nonhomestead
29 agricultural land that is or could be used for farming must, in
30 addition to any other payments, make the annual payment required
31 by this subdivision. The utility must, unless payment is
32 waived, agree to make the annual payment until the lines are
33 removed to the owner of the fee or contract for deed vendee, if
34 applicable. The annual payment must be equal to ten percent of
35 the estimated market value of the land on which the easement is
36 acquired as provided on the most recent property tax statement

1 at the time of acquisition of the easement. The annual payment
 2 must be increased each year by the percentage increase in the
 3 Consumer Price Index for the preceding calendar year. For the
 4 purpose of this subdivision, "Consumer Price Index" means the
 5 revised Consumer Price Index for all urban consumers for the St.
 6 Paul-Minneapolis metropolitan area prepared by the United States
 7 Department of Labor. If the tax statement applies to a larger
 8 parcel than the property acquired, the estimated market value
 9 must be multiplied by a percentage equal to the percentage that
 10 the land area of the easement acquired is of the area of the
 11 larger parcel. Notice of this subdivision must be provided to
 12 all affected landowners. The right to receive payments under
 13 this subdivision runs with and attaches to the land. The
 14 utility must be notified of any change in the ownership of the
 15 land. A landowner or contract for deed vendee may elect in
 16 writing to waive the payment required by this subdivision.

17 Sec. 3. Minnesota Statutes 2004, section 116C.63,
 18 subdivision 4, is amended to read:

19 Subd. 4. [CONTIGUOUS LAND.] When private real property
 20 that is an agricultural or nonagricultural homestead,
 21 nonhomestead agricultural land, rental residential property, and
 22 both commercial and noncommercial seasonal residential
 23 recreational property, as those terms are defined in section
 24 273.13 is proposed to be acquired for the construction of a site
 25 or route for a high-voltage transmission line with a capacity of
 26 ~~200~~ 100 kilovolts or more by eminent domain proceedings, the fee
 27 owner, or when applicable, the fee owner with the written
 28 consent of the contract for deed vendee, or the contract for
 29 deed vendee with the written consent of the fee owner, shall
 30 have the option to require the utility to condemn a fee interest
 31 in any amount of contiguous, commercially viable land which the
 32 owner or vendee wholly owns or has contracted to own in
 33 undivided fee and elects in writing to transfer to the utility
 34 within 60 days after receipt of the notice of the objects of the
 35 petition filed pursuant to section 117.055. Commercial
 36 viability shall be determined without regard to the presence of

1 the utility route or site. The owner or, when applicable, the
2 contract vendee shall have only one such option and may not
3 expand or otherwise modify an election without the consent of
4 the utility. The required acquisition of land pursuant to this
5 subdivision shall be considered an acquisition for a public
6 purpose and for use in the utility's business, for purposes of
7 chapter 117 and section 500.24, respectively; provided that a
8 utility shall divest itself completely of all such lands used
9 for farming or capable of being used for farming not later than
10 the time it can receive the market value paid at the time of
11 acquisition of lands less any diminution in value by reason of
12 the presence of the utility route or site. Upon the owner's
13 election made under this subdivision, the easement interest over
14 and adjacent to the lands designated by the owner to be acquired
15 in fee, sought in the condemnation petition for a right-of-way
16 for a high-voltage transmission line with a capacity of ~~200~~ 100
17 kilovolts or more shall automatically be converted into a fee
18 taking.

19 Sec. 4. [EFFECTIVE DATE.]

20 Sections 1 to 3 are effective the day following final
21 enactment and apply to easements acquired on or after that date."

22 Delete the title and insert:

23 "A bill for an act relating to agriculture; regulating the
24 taking of agricultural land for transmission of electricity;
25 amending Minnesota Statutes 2004, section 116C.63, subdivisions
26 3, 4, by adding a subdivision."

**TRANSMISSION LINE COMPENSATION
SF 462
SENATOR VICKERMAN**

The legislature has adopted a state energy policy that is designed to reduce our dependence on fossil fuels through the increased use of renewable energy which is generated in Minnesota.

The state has implemented that policy by requiring utilities to purchase a certain amount of energy from wind generators.

Wind energy is renewable, environmentally friendly, and creates economic development opportunities and jobs for rural Minnesota.

This session the legislature will consider a bill that establishes a goal of requiring that at least 20 percent of the electricity in the state be generated from renewable resources.

It's estimated that it would require the addition of 1,500 new wind turbines in South Western Minnesota to achieve this goal.

The fact is, that it doesn't make any sense to invest in building additional wind turbines, without the assurance that adequate transmission will be available.

The current delivery capacity of the transmission system is inadequate. Wind turbines on Buffalo Ridge (see handout; Figure 1) in SW Minnesota have to be shut down on windy days to prevent overloading the system.

The Environmental Quality Board reported in January that the transmission line problem is so serious that "This lack of infrastructure is not only restricting use of the existing wind turbines, it is restricting future wind development in the area."

The EQB concluded that "Unless there is a major breakthrough in transmission technology, more high-voltage transmission line will be needed in the future to deliver the increasing amounts of wind power expected on and near Buffalo Ridge. And more lower-voltage lines will be needed to collect the wind energy and feed it into the high-voltage lines."

Meeting the 20% renewable energy goal will require even more transmission lines. So where will all of these new transmission lines be located? Well, the end users will be households and businesses in the Twin Cities and suburbs. So the future transmission lines would impact rural, suburban and urban counties alike. Today, those lines are being built in my district; in Rock, Nobles, Murray and Jackson Counties. Tomorrow, they will be built in your constituent's backyard.

This June, the EQB is expected to give final approval for the construction of four new transmission lines in SW Minnesota. For the record, the EQB states that these four lines will directly impact 513 property owners, by crossing their land. Keep in mind that these are just the first of many lines that will have to be built, and that many other property owners will have their property impacted in the future. Some of those property owners will be in your district.

So what's the impact on our communities? In granting the Certificate of Need to build the four new transmission lines, the Administrative Law Judge made the following finding of fact:

.... "It is clear that the proposed lines will impose significant environmental, social and aesthetic burdens on the host communities."

What are those so called "burdens" on the host communities? In public comments submitted in response to the Draft Environmental Impact Statement on the four new transmission lines, property owners have expressed concerns about; negative impacts on agricultural operations, health problems, adverse impacts on local wetlands & wildlife, and about the aesthetic impact of the lines.

The EQB notes that the number one concern expressed in public comments is about the unfairness of the compensation offered by utilities for the taking of their land. Property owners noted that utility payments for easements didn't even provide for the full market value of the land taken, much less taking into account the ongoing loss of farm income from crop land taken out of production. In addition, they're concerned about the disruption to farming operations, and with the difficulty in maintaining efficient fieldwork patterns.

Landowners also expressed health concerns about exposure to electric fields, magnetic fields, and stray voltage. While utilities may dispute the scientific basis for such health concerns, I'd point out the position of the Minnesota Department of Health, which "Recommends a prudent avoidance policy in which exposure is minimized."

Communities further expressed concerns about the impact of transmission lines on wetlands, and on wildlife. The EQB's Draft Environmental Impact Statement noted that the four new transmission lines might impact; 25 wildlife management or waterfowl production areas; as well as removing groves of trees, and impacting our natural prairies.

Finally, I cannot overemphasize that property owners are very concerned about the aesthetics of transmission lines. Face it, those big towers are UGLY to look at. Property owners hate the visual blight of those giant metal monstrosities. People are convinced that the towers lower their property value.

The reason I emphasized all of these concerns is that they provide the basis for the Administrative Law Judge's finding of fact that "the proposed lines will impose significant environmental, social and esthetic burdens on the host communities."

As a society we understand that serving the "public good" sometimes necessitates the taking of private property. In the case of building transmission lines to move wind energy the "public good" can be measured both in economic and environmental terms.

In environmental terms, the state benefits from a reduced dependence on fossil fuels, and through a commitment to a public policy of developing renewable energy resources, which are more environmentally friendly.

In economic terms, the state benefits by; keeping more of the money spent on energy consumption in the state. The state also benefits by opening-up local community investment opportunities for wind generation, and by creating new jobs. Let me give you an example of the economic benefits derived from meeting the 20% renewable energy goal through wind generation. Achieving this goal would result in \$1.7 billion in capital investments, and the creation of over 1,500 jobs. In addition, it's estimated that consumers would save \$500 million on energy costs because of the competition from renewables.

Let me summarize what we know about Minnesota's wind energy policy. Wind energy is good for Minnesota, both from an environmental and an economic perspective. If we want to develop more wind energy, then we have to construct the infrastructure to move that energy from where it's produced to where it is consumed. The transmission lines needed to meet the state's energy policy place a burden on host communities. The brunt of that burden falls on property owners impacted by the lines. The major impediment to the siting of new transmission lines is public dissatisfaction with the current method of compensating property owners for the taking of their land.

As public policymakers, we must acknowledge the fact that government is allowing the taking private property for the "public good" and that property owners are not being fairly compensated for their loss. We must also recognize that a property owners loss is more than the land taken for the transmission line easement. It's about the ongoing loss of crop income from farmland that's forever taken out of production. It's about the loss associated with diminished property values due to the visual blight of the towers. It's about the loss of health from living under the lines. And last, but certainly not least of all, it's about the loss of our natural resources; our prairies, wetlands and wildlife.

People want to know why meeting the "public good" has to impose such a burden on individuals and their communities? They want to know why everyone benefits - the state, the utilities, and consumers - but not property owners.

The legislature needs to make sure that people who are adversely impacted by state energy policies are adequately compensated for their losses. It's time for a paradigm shift on how we think about meeting the "public good," when it comes to individual property rights. The state needs to do right by our communities and the people who live in them. The legislature must act to ensure that property owners are a valued partner in meeting the "public good." My bill does that by establishing a more fair and equitable means of compensating property owners for their losses through annual compensation payments.

Now let me introduce you to some property owners from my district, who want to talk to you about their concerns, and about how we address those concerns in Senate File 462.

WITNESSES

Tom Davis

John Nauerth

Tim Henning

Dear member of the Senate Energy Subcommittee

My name is Tom Davis and I represent the Fox Lake Power Association located in Southwestern Minnesota. I am here today to discuss our proposed formulas we have created to compensate landowners who are having transmission lines built across their property.

The first formula, Formula for Easement Payment, was established as a way for the landowners to be compensated fairly for use of our property to construct transmission lines. We chose to use the Estimated Market Value/acre derived from the tax statement at the time of the easement in our formula for it is a value that is easy for everyone to access. The purpose of the 150% multiplier was to help with the devaluation of the entire piece of property due to the construction of the transmission lines. With this formula the utility company will have all the information that they need. They have the Est. Market Value/acre, the size of the easement area, and the 150% multiplier at their disposal at the time of easement.

The second formula, Formula for Maintenance Fees, is an annual payment that will be set-up to reimburse landowners for having to maintain the area within the easement and any other losses and inconveniences that may incur. We used the Estimated Market Value derived from the tax statement at the time of easement for it is being used in the previous formula and is easy to find. We chose to use the CPI as an adjustment to the payments to compensate landowners for changes in inflation over the length of the easement. We chose to use 10 % as a factor to compensate for added costs and inconvenience of not being able to use the property within the easement for which it was intended by the landowner whether agricultural, commercial or residential.

Along with these formulas, we feel that all payments should follow the property with each sale or transfer of land. This way the landowner continues to receive the benefit no matter who owns the property. Keeping the certificate of need and the easement to the capacity or size of the line at the time of construction will ensure that the landowner has rights if they upgrade the utility. If the utility company wants to make changes to the line they will have to renegotiate with each landowner, which is only fair. We feel the certificate of need is still necessary, for it allows for public input and public notification of any potential effected landowners. If you eliminate the certificate of need, we need to eliminate the condemnation process so that the utility companies have to negotiate with the landowners. We need to change the Buy the Farm from 200 Kv to 100 Kv.

We are simply here to protect the interests of all individual landowners. We would like to thank all of you for giving us the opportunity to speak to you today. If you have any questions feel free to address them to us and we will try to answer them.

Tom Davis Jenny Tusa
Chairman Sec./Treas.
Fox Lake Power Association

Senators Anderson, Rosen, Ourada, Metzen and Kubly introduced--

S.F. No. 1369: Referred to the Committee on Jobs, Energy and Community Development.

1 A bill for an act

2 relating to utilities; requiring consideration of
3 installation opportunities for distributed generation;
4 authorizing establishment of local power quality
5 zones; proposing coding for new law in Minnesota
6 Statutes, chapter 216B.

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

8 Section 1. [216B.2426] [OPPORTUNITIES FOR DISTRIBUTED
9 GENERATION.]

10 The commission shall ensure that opportunities for the
11 installation of distributed generation, as that term is defined
12 in section 216B.169, subdivision 1, paragraph (c), are
13 considered in any proceeding under section 216B.2422, 216B.2425,
14 or 216B.243.

15 Sec. 2. [216B.82] [LOCAL POWER QUALITY ZONES.]

16 (a) Upon petition of a public utility or a ratepayer
17 located within the utility's service territory, the commission
18 may establish a local power quality zone. The commission may
19 authorize the utility to collect the direct costs of providing
20 higher quality power through one of the following options, or
21 any appropriate combination of the two:

22 (1) from customers within a zone, through tariffs and
23 surcharges for service in a zone that appropriately reflect the
24 cost of service to those customers; or

25 (2) from all of the utility's ratepayers, through an
26 automatic adjustment of charges, if the commission determines

1 that is in the public interest to do so.

2 (b) For the purposes of this section:

3 (i) "local power quality zone" means a geographic location
4 within a utility's service territory where the utility commits
5 to providing customers within the zone higher quality power than
6 is generally available outside the zone; and

7 (ii) "higher quality power" means a significantly lower
8 number of service interruptions and voltage fluctuations
9 resulting from the construction of structural redundancies and
10 enhancements.

1 Senator moves to amend S.F. No. 1369 as follows:

2 Pages 1 and 2, delete section 2, and insert:

3 "Sec. 2. [216B.82] [LOCAL POWER QUALITY ZONES.]

4 (a) Upon joint petition of a public utility as defined in
5 section 216B.02, subdivision 4, and any customer located within
6 the utility's service territory, the commission may establish a
7 zone within that utility's service territory where the utility
8 will install additional, redundant or upgraded components of the
9 electric distribution infrastructure that are designed to
10 decrease the risk of power outages, provided the utility and all
11 of its customers located within the proposed zone have approved
12 the installation of the components and the financial recovery
13 plan prior to the creation of the zone, and the proposed zone
14 contains at least two utility customers.

15 (b) The commission shall authorize the utility to collect
16 all costs of the installation of any components under this
17 section, including initial investment, operation and maintenance
18 costs and taxes from all customers within the zone, through
19 tariffs and surcharges for service in a zone that appropriately
20 reflect the cost of service to those customers, provided the
21 customers agree to pay all costs for a predetermined period,
22 including costs of component removal, if appropriate."

23 Amend the title accordingly

Senators Nienow and Wergin introduced--**S.F. No. 1492:** Referred to the Committee on Jobs, Energy and Community Development.

1 A bill for an act

2 relating to energy; expanding definition of qualified
3 on-farm biogas recovery facility; amending Minnesota
4 Statutes 2004, section 216C.41, subdivision 1.

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

6 Section 1. Minnesota Statutes 2004, section 216C.41,
7 subdivision 1, is amended to read:

8 Subdivision 1. [DEFINITIONS.] (a) The definitions in this
9 subdivision apply to this section.

10 (b) "Qualified hydroelectric facility" means a
11 hydroelectric generating facility in this state that:

12 (1) is located at the site of a dam, if the dam was in
13 existence as of March 31, 1994; and

14 (2) begins generating electricity after July 1, 1994, or
15 generates electricity after substantial refurbishing of a
16 facility that begins after July 1, 2001.

17 (c) "Qualified wind energy conversion facility" means a
18 wind energy conversion system in this state that:

19 (1) produces two megawatts or less of electricity as
20 measured by nameplate rating and begins generating electricity
21 after December 31, 1996, and before July 1, 1999;

22 (2) begins generating electricity after June 30, 1999,
23 produces two megawatts or less of electricity as measured by
24 nameplate rating, and is:

25 (i) owned by a resident of Minnesota or an entity that is

1 organized under the laws of this state, is not prohibited from
2 owning agricultural land under section 500.24, and owns the land
3 where the facility is sited;

4 (ii) owned by a Minnesota small business as defined in
5 section 645.445;

6 (iii) owned by a Minnesota nonprofit organization;

7 (iv) owned by a tribal council if the facility is located
8 within the boundaries of the reservation;

9 (v) owned by a Minnesota municipal utility or a Minnesota
10 cooperative electric association; or

11 (vi) owned by a Minnesota political subdivision or local
12 government, including, but not limited to, a county, statutory
13 or home rule charter city, town, school district, or any other
14 local or regional governmental organization such as a board,
15 commission, or association; or

16 (3) begins generating electricity after June 30, 1999,
17 produces seven megawatts or less of electricity as measured by
18 nameplate rating, and:

19 (i) is owned by a cooperative organized under chapter 308A
20 other than a Minnesota cooperative electric association; and

21 (ii) all shares and membership in the cooperative are held
22 by an entity that is not prohibited from owning agricultural
23 land under section 500.24.

24 (d) "Qualified on-farm biogas recovery facility" means an
25 anaerobic digester system that:

26 (1) is located at the site of an agricultural
27 operation; and

28 (2) is owned by an entity that is not prohibited from
29 owning agricultural land under section 500.24 and that owns or
30 rents the land where the facility is located, ~~and~~

31 ~~(3) begins generating electricity after July 17, 2001.~~

32 (e) "Anaerobic digester system" means a system of
33 components that processes animal waste based on the absence of
34 oxygen and produces gas used to generate electricity.

Senators Metzen, Gaither, Senjem, Kubly and Sparks introduced--

S.F. No. 1575: Referred to the Committee on Jobs, Energy and Community Development.

1 A bill for an act

2 relating to natural gas rates; allowing for recovery
3 of certain infrastructure replacement costs separately
4 from a general rate case; proposing coding for new law
5 in Minnesota Statutes, chapter 216B.

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

7 Section 1. [216B.1635] [RECOVERY OF ELIGIBLE
8 INFRASTRUCTURE REPLACEMENT COSTS BY GAS UTILITIES.]

9 Subdivision 1. [DEFINITIONS.] (a) "Gas utility" means a
10 public utility as defined in section 216B.02, subdivision 4,
11 that furnishes natural gas service to retail customers.

12 (b) "Gas utility infrastructure costs" or "GUIC" means gas
13 utility projects that:

14 (1) do not serve to increase revenues by directly
15 connecting the infrastructure replacement to new customers;

16 (2) are in service but were not included in the gas
17 utility's rate base in its most recent general rate case; and

18 (3) replace or modify existing infrastructure.

19 (c) "Gas utility projects" means relocation and replacement
20 of natural gas facilities located in the public right-of-way
21 required by the construction or improvement of a highway, road,
22 street, public building, or other public work by or on behalf of
23 the United States, the State of Minnesota, or a political
24 subdivision.

25 Subd. 2. [FILING.] (a) The commission may approve a gas

1 utility's petition for a rate schedule to recover GUIC under
2 this section.

3 (b) The filing is subject to the following:

4 (1) a gas utility may submit a filing under this section no
5 more than once per year;

6 (2) a gas utility must file sufficient information to
7 satisfy the commission regarding the proposed GUIC or be subject
8 to denial by the commission, which includes, but is not limited
9 to:

10 (i) the government entity ordering the project;

11 (ii) the location, description, and costs associated with
12 the project;

13 (iii) a description of the costs, and salvage value, if
14 any, associated with the existing infrastructure replaced or
15 modified as a result of the project;

16 (iv) the magnitude and timing of any known future gas
17 utility projects that the utility may seek to recover under this
18 section;

19 (v) the magnitude of GUIC in relation to the gas utility's
20 base revenue as approved by the commission in the gas utility's
21 most recent general rate case, exclusive of gas purchase costs
22 and transportation charges;

23 (vi) the magnitude of GUIC in relation to the gas utility's
24 capital expenditures since its most recent general rate case;

25 (vii) the amount of time since the utility last filed a
26 general rate case and the utility's reasons for seeking recovery
27 outside of a general rate case; and

28 (viii) documentation supporting the calculation of the GUIC.

29 Subd. 3. [COMMISSION AUTHORITY.] The commission may issue
30 orders and adopt rules necessary to implement and administer
31 this section.

32 [EFFECTIVE DATE.] This section is effective the day
33 following final enactment.

34 Sec. 2. [REPORT TO LEGISLATURE.]

35 The Department of Commerce shall review the operation and
36 impact of the GUIC recovery mechanism established under

1 Minnesota Statutes, section 216B.1635, on ratepayers and the
2 utility and submit a report of its findings and recommendations
3 to the legislature four years after the effective date of this
4 section.

1 Senator moves to amend S.F. No. 1575 as follows:

2 Page 1, line 17, delete "and"

3 Page 1, line 18, before the period, insert "; and

4 (4) the replacement or modification of infrastructure was

5 required by the federal government, the state, a political

6 subdivision of the state, or other governmental entity"

7 Page 2, line 2, after the period, insert "A gas utility may

8 petition the commission to recover a rate of return, income

9 taxes on the rate of return, incremental property taxes, plus

10 incremental depreciation expense associated with GUIC."

11 Page 2, line 8, delete ", which" and insert ". The

12 information"

13 Page 2, line 10, after the second "the" insert "gas utility"

14 and after "project" insert "and the purpose for which the

15 project is undertaken"

16 Page 2, after line 15, insert:

17 "(iv) the proposed rate design and an explanation of why

18 the proposed rate design is in the public interest;"

19 Page 2, line 16, delete "(iv)" and insert "(v)"

20 Page 2, line 19, delete "(v)" and insert "(vi)"

21 Page 2, line 23, delete "(vi)" and insert "(vii)"

22 Page 2, line 25, delete "(vii)" and insert "(viii)"

23 Page 2, line 28, delete "(viii)" and insert "(ix)"

24 Page 3, after line 4, insert:

25 "Sec. 3. [SUNSET.]

26 Sections 1 and 2 shall expire on June 30, 2015."

Senator Sparks introduced--

S.F. No. 1894: Referred to the Committee on Jobs, Energy and Community Development.

1 A bill for an act

2 relating to utilities; requiring Public Utilities
3 Commission and Department of Commerce to establish
4 e-filing system and authorizing onetime assessment;
5 appropriating money.

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

7 Section 1. [ELECTRONIC REGULATORY FILING SYSTEM.]

8 Subdivision 1. [ESTABLISHMENT.] The Public Utilities

9 Commission and Department of Commerce shall establish,
10 administer, and maintain an electronic regulatory filing
11 (e-filing) system to allow commission-related applications or
12 requests for hearing, comments, bids, or proposals, or other
13 various applications and requests; technical diagrams or
14 specifications; required notices, filings, reports, and hearing
15 documents and papers; rules and orders; and any other
16 administrative and regulatory documents and information, whether
17 required by law or desired for convenient access for and
18 availability to the public, to be filed with or retrieved from
19 the commission or department via the Internet.

20 However, this subdivision is subject to Minnesota Statutes,
21 chapter 13 and other laws limiting or prohibiting the
22 dissemination of certain information.

23 Subd. 2. [ASSESSMENT; E-FILING ACCOUNT;
24 APPROPRIATION.] The Public Utilities Commission shall make a
25 onetime assessment of public utilities, municipal utilities,

1 electric cooperative associations, and telecommunications
2 carriers proportionately, based on gross operating revenues
3 substantially like assessments made under Minnesota Statutes,
4 section 216B.62, to recover the costs for establishing the
5 e-filing system established under subdivision 1. Money in the
6 account is appropriated to the commissioner of commerce for the
7 purposes of subdivision 1.

8 [EFFECTIVE DATE.] This section is effective the day
9 following final enactment.

1 Senator moves to amend S.F. No. 1894 as follows:

2 Delete everything after the enacting clause and insert:

3 "Section 1. [LEGISLATIVE FINDINGS.]

4 The legislature finds that broad participation by the
5 public and other interested and affected parties in proceedings
6 of the Minnesota Public Utilities Commission serves the public
7 interest. The utilization of the Internet by the commission and
8 the Minnesota Department of Commerce, which maintains the
9 commission's records, to allow electronic access to commission
10 documents has expanded access to the commission's proceedings.
11 E-filing, which will enable individuals to electronically file
12 documents in ongoing proceedings via the Internet and permit the
13 electronic retrieval of all documents filed, is an effective way
14 to lower the costs and increase the ease and efficiency of
15 participation.

16 Sec. 2. [ESTABLISHMENT OF FUND.]

17 The Public Utilities Commission's e-filing account is
18 established. The commission shall make a onetime assessment to
19 regulated utilities of \$315,000, which must be deposited in the
20 account. Each public utility, municipal utility, electric
21 cooperative association, and telecommunications carrier must be
22 assessed in proportion to its respective gross operating
23 revenues for retail sales of gas, electric, or
24 telecommunications service in the state in the last calendar
25 year. Revenue in the account is appropriated to the commission
26 for the costs associated with establishing an e-filing system
27 that allows documents to be filed and retrieved via the
28 Internet. Revenue in the account remains available until
29 expended.

30 Sec. 3. [COMPLETION DATE.]

31 The e-filing system must be operational by September 30,
32 2005.

33 Sec. 4. [EFFECTIVE DATE.]

34 Sections 1 to 3 are effective the day following final
35 enactment."

36 Delete the title and insert:

1 "A bill for an act relating to energy; granting authority
2 to the Public Utilities Commission to assess utilities for
3 revenues to develop an electronic filing and retrieval system."

Senators Kelley, Senjem, Rosen and Anderson introduced--

S.F. No. 2041: Referred to the Committee on Jobs, Energy and Community Development.

1 A bill for an act

2 relating to energy; granting authority to the Public
3 Utilities Commission to assess utilities for revenues
4 to develop an electronic filing and retrieval system.

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

6 Section 1. [LEGISLATIVE FINDINGS.]

7 The legislature finds that broad participation by the
8 public and other interested and affected parties in proceedings
9 of the Minnesota Public Utilities Commission serves the public
10 interest. The utilization of the Internet by the commission and
11 the Minnesota Department of Commerce, which maintains the
12 commission's records, to allow electronic access to commission
13 documents has expanded access to the commission's proceedings.
14 E-filing, which will enable individuals to electronically file
15 documents in ongoing proceedings via the Internet and permit the
16 electronic retrieval of all documents filed, is an effective way
17 to lower the costs and increase the ease and efficiency of
18 participation.

19 Sec. 2. [ESTABLISHMENT OF FUND.]

20 The Public Utilities Commission's e-filing account is
21 established. The commission shall make a onetime assessment to
22 regulated utilities of \$315,000, which must be deposited in the
23 account. Each public utility, municipal utility, electric
24 cooperative association, and telecommunications carrier must be
25 assessed in proportion to its respective gross operating

1 revenues for retail sales of gas, electric, or
2 telecommunications service in the state in the last calendar
3 year. Revenue in the account is appropriated to the commission
4 for the costs associated with establishing an e-filing system
5 that allows documents to be filed and retrieved via the
6 Internet. Revenue in the account remains available until
7 expended.

8 Sec. 3. [COMPLETION DATE.]

9 The e-filing system must be operational by September 30,
10 2005.

11 Sec. 4. [EFFECTIVE DATE.]

12 Sections 1 to 3 are effective the day following final
13 enactment.

Senator Anderson introduced--

S.F. No. 1924: Referred to the Committee on Jobs, Energy and Community Development.

A bill for an act

relating to energy; promoting the use of hydrogen as an energy resource; appropriating money; amending Minnesota Statutes 2004, section 297A.67, by adding a subdivision; proposing coding for new law in Minnesota Statutes, chapter 216B.

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

Section 1. [216B.811] [DEFINITIONS.]

Subdivision 1. [SCOPE.] For purposes of sections 216B.811 to 216B.815, the terms defined in this section have the meanings given them.

Subd. 2. [CARBON-NEUTRAL.] "Carbon-neutral" means no net carbon dioxide emissions; or, if there are those emissions, that they are captured and permanently stored underground, or by some other scientifically proven method.

Subd. 3. [FUEL CELL.] "Fuel cell" means an electrochemical device that produces useful electricity, heat, and water vapor, and operates as long as it is provided fuel.

Subd. 4. [HYDROGEN.] "Hydrogen" means hydrogen produced using native energy sources and methods that are renewable or carbon-neutral, or that could be made so in the future.

Subd. 5. [RELATED TECHNOLOGIES.] "Related technologies" means balance of plant components necessary to make hydrogen and fuel cell systems function; turbines, reciprocating, and other combustion engines capable of operating on hydrogen; and electrolyzers, reformers, and other equipment and processes

1 necessary to produce, purify, store, distribute, and use
2 hydrogen for energy.

3 Sec. 2. [216B.812] [FOSTERING THE TRANSITION TOWARD ENERGY
4 SECURITY.]

5 Subdivision 1. [EARLY PURCHASE AND DEPLOYMENT OF HYDROGEN,
6 FUEL CELLS, AND RELATED TECHNOLOGIES BY THE STATE.] The
7 Department of Administration shall identify opportunities for
8 demonstrating the use of hydrogen fuel cells within state-owned
9 facilities, vehicle fleets, and operations.

10 The department shall purchase and demonstrate hydrogen,
11 fuel cells, and related technologies in ways that strategically
12 contribute to realizing Minnesota's hydrogen economy goal as set
13 forth in section 216B.013, and which contribute to the following
14 nonexclusive list of objectives:

15 (1) provide needed performance data to the marketplace;

16 (2) identify code and regulatory issues to be resolved;

17 (3) advance or validate a critical area of research;

18 (4) foster economic development and job creation in the
19 state;

20 (5) raise public awareness of hydrogen, fuel cells, and
21 related technologies; or

22 (6) reduce emissions of carbon dioxide and other pollutants.

23 Subd. 2. [SUPPORT FOR STRATEGIC DEMONSTRATION PROJECTS
24 THAT ACCELERATE THE COMMERCIALIZATION OF HYDROGEN, FUEL CELLS,
25 AND RELATED TECHNOLOGIES.] (a) In consultation with appropriate
26 representatives from state agencies, local governments,
27 universities, businesses, and other interested parties, the
28 Department of Commerce shall report back to the legislature by
29 November 1, 2005, and every two years thereafter, with a slate
30 of proposed pilot projects that contribute to realizing
31 Minnesota's hydrogen economy goal as set forth in section
32 216B.013. The Department of Commerce must consider the
33 following nonexclusive list of priorities in developing the
34 proposed slate of pilot projects:

35 (1) demonstrate "bridge" technologies such as

36 hybrid-electric, off-road, and fleet vehicles running on

1 hydrogen or fuels blended with hydrogen;

2 (2) develop cost-competitive, on-site hydrogen production
3 technologies;

4 (3) demonstrate nonvehicle applications for hydrogen;

5 (4) improve the cost and efficiency of hydrogen from
6 renewable energy sources; and

7 (5) improve the cost and efficiency of hydrogen production
8 using direct solar energy without electricity generation as an
9 intermediate step.

10 (b) For all demonstrations, individual system components of
11 the technology must meet commercial performance standards and
12 systems modeling must be completed to predict commercial
13 performance, risk, and synergies. In addition, the proposed
14 pilots should meet as many of the following criteria as possible:

15 (1) advance energy security;

16 (2) capitalize on the state's native resources;

17 (3) result in economically competitive infrastructure being
18 put in place;

19 (4) be located where it will link well with existing and
20 related projects and be accessible to the public, now or in the
21 future;

22 (5) demonstrate multiple, integrated aspects of hydrogen
23 infrastructure;

24 (6) include an explicit public education and awareness
25 component;

26 (7) be scalable to respond to changing circumstances and
27 market demands;

28 (8) draw on firms and expertise within the state where
29 possible;

30 (9) include an assessment of its economic, environmental,
31 and social impact; and

32 (10) serve other needs beyond hydrogen development.

33 Subd. 3. [ESTABLISHING INITIAL, MULTIFUEL TRANSITION
34 INFRASTRUCTURE FOR HYDROGEN VEHICLES.] The commissioner of
35 commerce may accept federal funds, expend funds, and participate
36 in projects to design, site, and construct multifuel hydrogen

1 fueling stations that eventually link urban centers along key
2 trade corridors across the jurisdictions of Manitoba, the
3 Dakotas, Minnesota, Iowa, and Wisconsin.

4 These energy stations must serve the priorities listed in
5 subdivision 2 and, as transition infrastructure, should
6 accommodate a wide variety of vehicle technologies and fueling
7 platforms, including hybrid, flexible-fuel, and fuel cell
8 vehicles. They may offer, but not be limited to, gasoline,
9 diesel, ethanol (E-85), biodiesel, and hydrogen, and may
10 simultaneously test the integration of on-site combined heat and
11 power technologies with the existing energy infrastructure.

12 The hydrogen portion of the stations may initially serve
13 local, dedicated on or off-road vehicles, but should eventually
14 support long-haul transport.

15 Sec. 3. [216B.813] [HYDROGEN PRODUCTION INCENTIVE AND
16 APPROPRIATION.]

17 Subdivision 1. [APPLICATION.] The incentive provided by
18 this section applies to qualified hydrogen generation facilities
19 beginning operation after July 1, 2005. Payment may only be
20 made upon receipt by the commissioner of finance of an incentive
21 payment application that establishes that the applicant is
22 eligible to receive an incentive payment. The application must
23 be in a form and submitted at a time the commissioner
24 establishes.

25 Subd. 2. [APPROPRIATION.] There is annually appropriated
26 from the general fund to the commissioner of commerce sums
27 sufficient to make the payments required under this section.

28 Subd. 3. [ELIGIBILITY WINDOW.] Payments may be made under
29 this section only for hydrogen generated from a qualified
30 hydrogen generation facility that is operational and producing
31 hydrogen before December 31, 2010.

32 Subd. 4. [PAYMENT PERIOD.] A facility may receive payments
33 under this section for a ten-year period. No payment under this
34 section may be made for hydrogen generated by a qualified
35 hydrogen generation facility after December 31, 2020. The
36 payment period begins and runs consecutively from the date the

1 facility begins generating hydrogen.

2 Subd. 5. [AMOUNT OF PAYMENT; HYDROGEN FACILITIES
3 LIMIT.] The production incentive is 48 cents per gallon of
4 gasoline equivalent used for transportation fuel, electricity,
5 heating, cooling, fertilizer production, or other new
6 commercially productive use.

7 Subd. 6. [ELIGIBILITY PROCESS.] A qualifying project is
8 eligible for the incentive on the date the commissioner of
9 commerce receives:

10 (1) an application for payment of the incentive;

11 (2) a copy of the purchase order for equipment to construct
12 the project with a delivery date and a copy of a signed receipt
13 for a nonrefundable deposit; and

14 (3) any other information the commissioner deems necessary
15 to determine whether the proposed project qualifies for the
16 incentive under this section.

17 The commissioner of commerce shall determine whether a
18 project qualifies for the incentive, and respond in writing to
19 the applicant approving or denying the application within 15
20 working days of receipt of the information required.

21 A project that is not operational within 18 months of
22 receipt of a letter of approval is no longer approved for the
23 incentive. The commissioner shall notify an applicant of
24 potential loss of approval not less than 60 days prior to the
25 end of the 18-month period.

26 Eligibility for a project that loses approval may be
27 reestablished as of the date the commissioner receives a new
28 completed application.

29 Sec. 4. [216B.814] [ENERGY INFRASTRUCTURE TRANSITION
30 ACCOUNT.]

31 Subdivision 1. [ACCOUNT CREATED.] There is established in
32 the state treasury an energy infrastructure transition account
33 in the special revenue fund. All repayments of financial
34 assistance granted under subdivision 2, including principal and
35 interest, must be deposited into the energy infrastructure
36 transition account.

1 Subd. 2. [ENERGY INFRASTRUCTURE TRANSITION LOAN
2 PROGRAM.] The Department of Commerce may establish, adopt rules
3 for, and implement a loan program to provide capital for the
4 construction of vehicle refueling facilities that deploy any
5 combination of renewable and carbon-neutral technologies that
6 provide transportation fuel, electricity, heating, or cooling.
7 The program may provide for secured or unsecured loans, loan
8 participations, and loan guarantees with respect to real or
9 personal property comprising all or part of the facilities and
10 the payment of costs incurred by the commissioner to establish
11 and administer the loan program. Fees collected for
12 administration of the program must be deposited in the energy
13 infrastructure transition account.

14 Sec. 5. [216B.815] [AUTHORIZE AND ENCOURAGE THE STATE'S
15 PUBLIC RESEARCH INSTITUTIONS TO COORDINATE AND LEVERAGE THEIR
16 STRENGTHS THROUGH A REGIONAL ENERGY RESEARCH AND EDUCATION
17 PARTNERSHIP.]

18 The state's public research and higher education
19 institutions must work with one another and with similar
20 institutions in the region to establish Minnesota and the Upper
21 Midwest as a center of research, education, outreach, and
22 technology transfer for the production of renewable and
23 carbon-neutral energy and products, including hydrogen, fuel
24 cells, and related technologies. The partnership must be
25 designed to create a critical mass of research and education
26 capability that can compete effectively for federal and private
27 investment in these areas.

28 The partnership must include an advisory committee
29 comprised of government, industry, academic, and nonprofit
30 representatives to help focus its research and education efforts
31 on the most critical issues. Initiatives undertaken by the
32 partnership may include:

33 (1) collaborative and interdisciplinary research,
34 demonstration projects, and commercialization of market-ready
35 technologies;

36 (2) creation of undergraduate and graduate course offerings

1 and eventually degreed and vocational programs with reciprocity;

2 (3) establishment of fellows programs at the region's
3 institutes of higher learning that provide financial incentives
4 for relevant study, research, and exchange; and

5 (4) development and field-testing of relevant curricula,
6 teacher kits for all educational levels, and widespread teacher
7 training, in collaboration with state energy offices, teachers,
8 nonprofits, businesses, the United States Department of Energy,
9 and other interested parties.

10 Sec. 6. Minnesota Statutes 2004, section 297A.67, is
11 amended by adding a subdivision to read:

12 Subd. 32. [HYDROGEN.] Hydrogen, as defined in section
13 216B.811, subdivision 4, is exempt if the hydrogen is used for
14 transportation fuel, electricity generation, heating, cooling,
15 fertilizer production, or other new commercially productive use.

16 [EFFECTIVE DATE.] This section is effective for sales after
17 June 30, 2005, and before January 1, 2015.

18 Sec. 7. [APPROPRIATIONS.]

19 \$300,000 is appropriated in fiscal year 2006 and \$300,000
20 is appropriated in fiscal year 2007 from the general fund to the
21 commissioner of commerce for the purpose of matching federal and
22 private investments in three multifuel hydrogen refueling
23 stations in Moorhead, Alexandria, and the Twin Cities
24 respectively. The unencumbered balance in the first year does
25 not cancel but is available for the second year. Availability
26 of the appropriation is contingent upon securing the balance of
27 the total project costs from nonstate sources.

Bill Summary for SF1924

"Hydrogen Transition Act"

April 6, 2005

Rationale for the bill: The United States (Minnesota included) is increasingly dependent on imported oil to run our economy, particularly in the transportation sector where nearly 100% of our fuel comes from petroleum. The main alternatives to gasoline are biofuels, electricity and hydrogen, and automakers have largely given up on electric-only vehicles, which leaves biofuels and hydrogen, both of which this bill promotes.

BP, Shell and ChevronTexaco are committing millions to develop hydrogen infrastructure, and all the major automakers are working diligently on hydrogen-powered fuel cell vehicles. Indeed GM representatives recently said that they believe hydrogen is coming sooner rather than later, and are still aiming to have an attractive affordable fuel cell vehicle ready by 2010. Ford, Toyota and Honda are equally committed.

But given the long lead times necessary to turn over energy and refueling infrastructure, we must begin now to develop and demonstrate the most promising alternatives. That is what this bill does.

Timing is critical though. Because it is only during the emerging stages of a new industry that state governments can influence where concentrations of investments are made.

History has demonstrated that the states that play the largest leadership roles in developing emerging industries become "homes" to those industries, and receive the lion's share of the jobs and revenues from them.

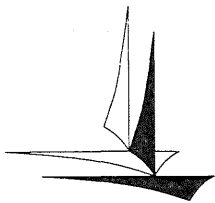
7 Key Elements of the Bill:

- 1. Early purchase and deployment of hydrogen, fuel cells and related technologies by state government.** This provision asks the Department of Administration to deploy hydrogen and fuel cells in state operations in ways that strategically contribute to realizing Minnesota's hydrogen economy goal [216B.013].
- 2. Support for strategic demonstration projects.** Similarly, this provision asks the Department of Commerce to identify the most promising and strategic demonstration opportunities outside of government and report back by November 1, 2005, and every two years thereafter. Industry has made it clear that the only way to speed

commercialization of hydrogen and fuel cells is to put these technologies to the test in real-world settings and to learn by doing.

3. **Hydrogen production incentive.** Much as with wind energy, an early production incentive will help jump-start a hydrogen industry in Minnesota. The 48 cents/ gallon of gasoline (gge) equivalent is taken from a federal bill proposed by Republican Christopher Cox of California¹ and adds up to \$20 for every barrel of oil replaced by hydrogen. This provision would sunset in 2020, after which time hydrogen should no longer need such support. This provision should have little or no cost in the short-run.
4. **Energy Infrastructure Transition (EIT) Fund & Loan program** establishes a revolving source of capital to help finance fuel cell deployment and vehicle refueling facilities that deploy hydrogen.
5. **Authorization and encouragement of a regional Energy Research and Education Partnership.** This provision simply encourages coordination among research and education institutions within Minnesota and the region so that their efforts are best leveraged. This is a direction that the University of Minnesota and its Initiative on Renewable Energy and the Environment are already taking. Developing such a partnership would help create a critical mass of research and education capability here that can compete effectively with the coasts for federal and private investment.
6. **Tax exemption for hydrogen.** This provision costs the state nothing except foregone earnings down the road. But in return, we can help create an economically attractive environment for an emerging hydrogen industry to take root in our state. This provision would run from June 30 2005 to January 1, 2015.
7. **Appropriation for 3 multi-fuel hydrogen refueling demonstrations in Moorhead, Alexandria and the Twin Cities (\$600K).** This provision provides a modest amount of state match for the planning, design and construction of three multi-fuel hydrogen stations and fleet vehicle demonstrations. It costs the state nothing unless non-state monies are secured for the balance of the project expenses (roughly \$2 million per station). North Dakota has a companion appropriation pending for the Fargo/Moorhead project. The stations would demonstrate promising renewable hydrogen production pathways such as wind, ethanol and methane. They would:
 - Provide real world performance data for on-site hydrogen production, delivery and use in cold weather climates;
 - Build markets for hydrogen, fuel cells, biofuels and distributed electric generation (DG);
 - Create an initial multi-fuel infrastructure to serve those markets;
 - Develop customer acceptance and educate key constituencies;
 - Demonstrate system safety and identify additional research needs.
 - Reveal needed changes in policy, codes and standards.

¹ The incentive payment is based on the number of barrels-of-oil equivalent of hydrogen. The amount is equal to \$20.00 (U.S.), adjusted for inflation, multiplied by each quantity of hydrogen having a Btu content of 5,800,000. A barrel of oil contains 5,800,000 Btus (British Thermal Units) and yields 42 U.S. gallons of gasoline; 1 kg of hydrogen has roughly the same energy content as 1 gallon of gasoline when used in a fuel cell vehicle. \$20 per 42 kilograms of hydrogen = a production incentive of \$0.48 per kilogram of H₂ = roughly 4 cents per kilowatt-hour.



Minneapolis
City of Lakes

Office of the Mayor

R. T. Rybak
Mayor

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Dear Colleague:

There is something exciting that New York, Washington DC, Tokyo, Berlin, Amsterdam, and other major cities around the world have in common these days — hydrogen refueling stations.



There are at least 87 hydrogen stations worldwide and “hydrogen highway” efforts are emerging across the globe. Until now, however, no similar effort has been proposed in the heartland of the United States — where the clean hydrogen production potential from wind and biomass is among the greatest.

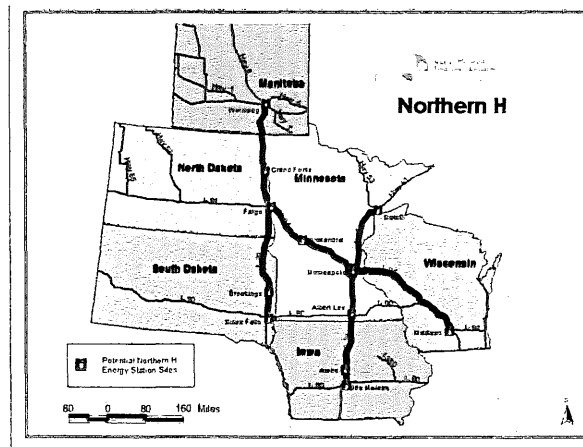
Given our long history of technological and environmental leadership here, the City of Minneapolis is enthusiastic about the potential for developing one of these next-generation Energy Stations. Becoming a leader in hydrogen and biofuels will help the city accomplish a number of its stated goals, including improved air quality and showcasing new technologies that reduce reliance on foreign oil.

National Geographic's cover story last June bluntly announced “The End of Cheap Oil.” Of course there have been dire predictions about oil before, but this time both oil optimists and pessimists agree that within the next several decades global oil production will peak (if it hasn't already) and prices will rise. Worse still, two thirds of the world's proven reserves lie in the volatile Middle East. Even drilling in Alaska will only delay the inevitable.

Today's oil prices are still relatively low in real terms, but \$57-a-barrel-oil and average gasoline prices of more than \$2.00 a gallon are stark reminders that the U.S. needs nonpetroleum options, and those options will take time to put in place. Indeed, the global race is on to find petroleum alternatives, particularly in the transportation sector; and electricity, biofuels and hydrogen are the main candidates.

In response, the Upper Midwest Hydrogen Initiative — a public-private venture of the Minneapolis-based Great Plains Institute — proposes to establish the world's first network of flexible-fuel hydrogen “gas” stations as transition infrastructure that could offer all three options. The hydrogen portion of each station along the Northern H would support a local

dedicated fleet use, such as a transit bus or delivery vehicles, but would also allow people to see the wonder of hydrogen technology in use before using it themselves.



On behalf of the City of Minneapolis, I urge you to join me in supporting the development of initial, multi-fuel hydrogen stations and controlled fleet demonstrations here in Minnesota and across the region. Minneapolis looks forward to helping lead the way toward a clean, energy secure transportation future.

Warm regards,

Mayor R.T. Rybak
City of Minneapolis

- 1 Senator moves to amend S.F. No. 1924 as follows:
- 2 Page 1, delete lines 12 to 15
- 3 Page 1, line 16, delete "3" and insert "2"
- 4 Page 1, line 19, delete "4" and insert "3"
- 5 Page 1, line 20, delete everything after "sources"
- 6 Page 1, line 21, delete everything before the period
- 7 Page 1, line 22, delete "5" and insert "4"
- 8 Page 6, line 4, after "deploy" insert "hydrogen, biofuels,"
- 9 Page 6, delete line 5, and insert "and related technologies
- 10 as those facilities meet a demand for"
- 11 Page 6, line 6, delete "provide"
- 12 Page 6, line 19, delete "must" and insert "should"
- 13 Page 6, lines 22 and 23, delete "and carbon-neutral"
- 14 Page 6, line 24, delete "must" and insert "should"