

GENERAL ASSEMBLY OF NORTH CAROLINA
SESSION 2011

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SENATE BILL 671

Short Title: Smart Grid Job Creation and Retention Act. (Public)

Sponsors: Senators Hartsell, Stein, and Hise.

Referred to: Commerce.

April 20, 2011

1 A BILL TO BE ENTITLED
2 AN ACT TO PROVIDE A TAX CREDIT FOR RESEARCH REGARDING
3 TECHNOLOGIES FOR THE MODERN ELECTRIC GRID, AS THAT TERM IS
4 DEFINED UNDER THE FEDERAL ENERGY POLICY ACT OF 2007.

5 Whereas, the modern electric grid is a reliable and secure electricity infrastructure
6 that can meet future demand growth and achieve increased use of digital information and
7 controls technology to improve reliability, security, and efficiency of the electric grid; and

8 Whereas, the modern electric grid will allow dynamic optimization of grid
9 operations and resources, with full cyber-security; and

10 Whereas, the modern electric grid will allow deployment and integration of
11 distributed resources and generation, including renewable resources; and

12 Whereas, the modern electric grid will allow deployment of "smart" technologies
13 (real-time, automated, interactive technologies that optimize the physical operation of
14 appliances and consumer devices) for metering, communications concerning grid operations
15 and status, and distribution automation; and

16 Whereas, the modern electric grid will allow the deployment and integration of
17 advanced electricity storage and peak-shaving technologies, including plug-in electric and
18 hybrid electric vehicles, and thermal-storage air-conditioning; and

19 Whereas, the modern electric grid will allow integration of "smart" appliances and
20 consumer devices; and

21 Whereas, the modern electric grid will allow the provision to consumers of timely
22 information and control options; Now, therefore,

23 The General Assembly of North Carolina enacts:

24 **SECTION 1.** G.S. 105-129.15 is amended by adding a new subdivision to read:

25 "**§ 105-129.15. Definitions.**

26 The following definitions apply in this Article:

27 ...

28 (9) Smart-grid technology. – Includes each of the following:

29 a. Integrated communications. – High-speed, two-way communication
30 technologies, including, but not limited to, broadband over power
31 line communication technologies, wireless communication
32 technologies, and local area networks of appliances and other devices
33 in the home.

34 b. Advanced components. – Devices that play an active role in
35 determining the electric behavior of the grid, including, but not
36 limited to, advanced switches, transformers, cables, and other
37 electrical devices; storage devices, including plug-in hybrid electric



1 vehicles and advanced batteries; and appliances capable of delaying
2 operation in response to price signals.

3 c. Advanced control and monitoring methods. – Methods and
4 algorithms that monitor power system components and enable rapid
5 diagnosis and timely, appropriate response to any event, including,
6 but not limited to, substation and distribution automation, real-time
7 monitoring and control of substation and distribution equipment,
8 software, or fault locator systems that use sensors and digital
9 information to locate faults.

10 d. Sensing and measurement devices. – Technologies that enhance
11 power system measurements and enable the transformation of data
12 into information, including, but not limited to, advanced sensors,
13 advanced metering infrastructure, phasor measurement units,
14 dynamic line-rating devices that determine real-time capacity of
15 electric lines, and consumer portals that provide consumers with
16 real-time information about energy consumption and prices.

17 e. Improved interfaces and decision support. – Devices or software that
18 will enable more accurate and timely human decision making at all
19 levels of the grid, including, but not limited to, software tools to
20 analyze the health of the electricity system, distribution system
21 modeling software, real-time digital simulators to study and test
22 electricity systems, or geographic information systems."

23 **SECTION 2.** Article 33 of Chapter 105 of the General Statutes is amended by
24 adding a new section to read:

25 **"§ 105-129.16K. Smart electric grid tax credit.**

26 (a) Credit. – A taxpayer that develops smart-grid technology in this State is allowed a
27 credit equal to a percentage of the taxpayer's qualifying expenses, determined as provided in
28 this section, that exceed fifty thousand dollars (\$50,000). If more than one subdivision of this
29 subsection applies to the same qualifying expense, then the credit is equal to the higher
30 percentage, and not both percentages combined. For purposes of this section, qualifying
31 expenses are (i) compensation, wages, and employee fringe contributions (including health,
32 pension, and welfare contributions) for a full-time job on which withholding payments are
33 remitted to the Department under Article 4A of this Chapter and (ii) amounts paid to a
34 participating community college or a research university for services performed in this State.
35 The percentage of the taxpayer's qualifying expenses allowed as a credit are as follows:

- 36 (1) Higher education collaboration. – Twenty percent (20%) for allowable
37 expenses paid to a participating community college or a research university.
38 (2) Other. – Fifteen percent (15%) for allowable expenses not described by
39 subdivision (1) of this subsection.

40 (b) No Double Benefit. – A taxpayer that claims a credit under this section may not
41 claim any of the following with respect to the expenses used to determine the credit under this
42 section:

- 43 (1) A credit allowed under any other section of this Chapter.
44 (2) A grant from the Job Development Investment Grant Program, set out in
45 Part 2G of Article 10 of Chapter 143B of the General Statutes.
46 (3) A grant from the One North Carolina Fund set out in Part 2H of Article 10 of
47 Chapter 143B of the General Statutes."

48 **SECTION 3.** This act becomes effective July 1, 2011.