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JAPAN RENEWABLE ENERGY FOUNDATION

# Proposals for Japan FIT system

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Ver.1

**Japan Renewable Energy Foundation (JREF)**

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## Executive summary

### **1. Price and term for power purchase**

#### (1) Setting the price and term for power purchase

- Transparency, longevity and certainty (TLC) must be ensured in promoting private investment on renewable energy deployment. Given that, when the Government defines the price and term for power purchase, it should establish clear rules for setting and adjusting price and show the long-term prospect of price trend and design FIT system that allows forecast and projection of price.
- Set the purchase price at the level high enough to ensure 7% IRR (before-tax) of any electrical power generation projects regardless of technologies<sup>1</sup> of renewable electricity production.
- Set the purchase term (term for power purchase agreement) to a longer period than the statutory useful life of power generation installations, regardless of technologies of electrical power generation. The term has to be 20 years in principle and the purchase has to be continued beyond 20 years at the price that is higher than avoidable cost.
- Set the purchase price according to installation size for geothermal, small hydro and biomass that are easier to achieve economy of scale.
- Determine the price and term for purchase for power generation projects at the earliest possible phase of such projects considering the length of lead time for development.

#### (2) Review of the price and term for power purchase

- Show purchase price projection and its term in coming years to make FIT system foreseeable, as frequent review and change of price and term can negatively affect business plans of renewable energy installation operators, investors, manufacturers and so on.
- As for PV, price of which is expected to fall rapidly in a short term, ensure appropriate price adjustment by adjusting price-depreciation rate based on actual newly-installed capacity in a preceding year so as to supplement regular price review.

#### (3) Others

- Add electricity from repowered installations to the list of purchase under the FIT system, with a view to increase production of renewable electricity

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<sup>1</sup> PV, wind, geothermal, small-scale hydro and biomass.

through repowerment. Repowerment here means replacement of key components of installations (turbine, water wheel, power generator, etc) in principle, though different standards have to be set by technology of electrical power generation. Establish a program to provide financial support to project development feasibility study in return for abolishing the existing subsidy for building new facilities.

- Stipulate that environment value of renewable electricity (CO2 reduction effect) belongs to operators of renewable electricity installations. (Please see detailed explanation in the body.)

## **2. Guaranteed grid access and priority dispatch**

### **(1) Guaranteed grid access**

- Set guidelines, etc to illustrate examples of exceptions to the guaranteed grid access of the utility companies which purchase power (as they operate power transmission) so as to eliminate chances of their arbitrary decisions.
- Clarify that the burden of proof is on the utility companies if they reject contract of grid access of renewable electricity and require them to announce the reasons for rejection in writing as soon as possible. Also get utility companies to present an action plan to overcome the reasons for rejection with concrete time line.
- Set a time limit for determination by utility companies on grid access

### **(2) Priority dispatch**

- Ensure to guarantee priority dispatch for electricity from renewable energy with a view to make the most of renewable electricity. Allow to regulate electricity output from renewable energy sources only when no other choice is possible.

### **(3) Damage compensation and other compensation**

- Make utility company liable for damage incurred by Installation operators due to the rejection of grid access.
- Make utility company liable for paying the compensation to Installation operators of renewable electricity generation when utility companies regulate electricity output and as a result installation are not able to supply the pre-defined volume of electricity.

### **(4) Cost sharing**

- Clarify the rules about grid access cost sharing between Installation

operators and utility companies. Stipulate that utility companies shall pay costs of grid addition and enhancement and additional costs incurred when a grid access point other than the one at the shortest distance is chosen, and installation operators shall bear costs of access from their facilities to the grid access point at the shortest distance.

(5) Information disclosure on grid system and installation of feeder

- Backbone feeders should be installed /improved by an appropriate time limit with active involvement by the Government in areas with high potential capacity of renewable energy sources .
- National government and transmission grid operators should develop a concrete plan for feeder installation from mid- and long-term perspective.
- Utility companies should disclose all data pertaining to capacity of feeder network, converter station capacity etc, on the Web and so on to ensure the fair grid access.

### **3. Procedures, organizations**

(1) Data disclosure

- Have Utility companies, installation operators and the Government disclose data regarding FIT for a monitoring purpose to ensure fair and transparent procedures. Especially, ensure the disclosure of data regarding grid access in order to eliminate the risk of arbitrary rejection of connection by utility companies.

(2) Establishment of a new independent organization

- Establish a new independent organization for grid-access dispute settlement to remove influence of utility companies and to ensure fairness.

(3) Establishment of guidelines and rules to ensure efficient discussions on grid access.

- Establish guideline and rules to ensure efficient discussions on grid access, easing the burden on both installation operators and utility companies.

(4) Regular progress report

- Government should prepare and issue progress report covering information about installed capacity, electricity production volume, installation costs, etc, on a regular basis (for instance, on a quarterly basis) to monitor the progress of FIT.

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## Preface

This proposal document is put together by Japan Renewable Energy Foundation (JREF) based on the deliverable of “International workshop on FIT<sup>2</sup>”, which was co-hosted by JREF and Institute for Sustainable Energy Policies (ISEP) and participated by experts from Japan and abroad in December 2011, the hearings from Japanese renewable energy installation operators and the examples in overseas.<sup>3</sup>

This proposal document refers to the Act pertaining to German FIT (Renewable Energy Sources Act or EEG) because of the following reasons:

- The current German FIT is fair, well-balanced and successful because it is a product of all the efforts that have been made since 1992 to resolve problems with utility companies and to win public understanding. The FIT is fair, well-balanced and successful.
- Germany has been a global leader in terms of investment on wind and PV power generation for the past 10 years.
- Unlike in Spain, there has been no solar bubble in Germany.
- German FIT is highly transparent system backed by actual data.
- Roles and responsibilities of players are clearly stipulated in the Act.
- Germany was prompt to appropriately correct extremely high pricing on PV electricity purchase resulting from reckless promotions of PV power generation.
- Germany has been playing a key role in practice sharing among FIT implementing countries.

We hope this proposal document is useful in designing Japan FIT system and contributes to the promotion of renewable electricity generation in Japan.

Lots of experts in and outside Japan offered valuable advice on this proposal. The following people in particular gave us advice based on their plenty of experience:

Dr. Dorte Fouquet (European Renewable Energies Federation/ Lawyer)

Dr. Eric Martinot (Institute for Sustainable Energy Policies)

Dr. Martin Pehnt (Institute for Energy and Environmental Research)

Mr. Toby. D. Couture (E3 Analytics)

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<sup>2</sup> For more details about the workshop and materials please visit JREF website at [http://www.jref.or.jp/action/event\\_20111208.html](http://www.jref.or.jp/action/event_20111208.html)

<sup>3</sup> Prof. Kenji Yamaji, Executive Board Member of JREF, avoided direct involvement in making this proposal as he was a candidate for a member of Procurement Price Calculation Committee of METI.

# 1. Price and term for power purchase

## 1.1 Principle

- Feed-in Tariff system (hereafter “FIT”) is aimed to encourage private investment in renewable energy. Under the system, purchase of renewable electricity by utility companies at fixed price is guaranteed for a defined period. Given that, transparency, longevity and certainty (TLC)<sup>4</sup> are a must in promoting private investment. Government should establish clear rules for setting price and term for power purchase and show the long-term prospect of FIT system so as to make it a highly predictable system.
- If purchase price is too low, or purchase term is too short, for operators of Installations generating electricity from renewable energy sources (hereafter “installation operators”) and investors to secure ROI, capital investment in renewable electricity installations can be discouraged, leading to failure of fulfilling the objective of FIT. On the other hand, if purchase price is too high, or purchase term is too long, Installation operators and investors can rake in a huge profit, possibly leading to excessive investment. Also, as FIT is designed to have electricity users share the cost broadly and thinly in the form of surcharge, public understanding on FIT is vital to maintain the system. Therefore, when setting purchase price, it is necessary to strike a better balance between the promotion of renewable electricity generation and the control of excessive profits.

## 1.2 Proposal

### (1) Setting the price and term for power purchase

- Under the paragraph 2 of Article 3 of the Act on Special Measures concerning the Procurement of Renewable Electric Energy by Utility companies (hereafter the “Act”), the purchase price is to be determined taking account of the profit that Installation operators should make and other factors including costs. Also the Article 7 of Supplementary Provisions provides particular consideration should be given to the profit that Installation operators should make when setting the purchase price during the period of three years from the Act’s effective date. Considering those provisions, the price for purchase should be at the level which ensures 7% IRR of any electrical power generation projects regardless of technologies of renewable electricity production.

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<sup>4</sup> “Paying for Renewable Energy: TLC at the Right Price” DB Climate Change Advisors, Deutsche Bank Group, December 2009

Reference: IRR targets in FIT in Germany and Spain

Germany

The target IRR is set at 5-7%, a bit lower than that of other countries, to minimize excessive profits, but as for off-shore wind a higher IRR is set considering risk level of the electricity generation technology, which is still under development.

Spain

The target IRR varies depending on the risk level of electricity generation technology. The target IRR for low risk technology: PV and on-shore wind power are 7% and 8% respectively. The target IRR for high risk technology: biomass is 9-10%, off-shore wind 9+% and tidal force 10+%. Also IRR target is adjusted based on the gap between the government-set target and the actual results.

- FIT is also designed to promote renewable electricity production in locations that are not easy to build installations on. When setting price, it is vital to factor in the costs of building projects which had been cancelled due to the geographical difficulty, not to mention the costs of existing installations.
- The purchase term should be set taking account of useful life of electricity production facilities and set to a longer period than the statutory useful life at least. Also 20 year-purchase term should be applied to across all the installations producing renewable electricity.
- The Article 3 of the Act provides that the price and term for purchase is to be determined by type of installations generating renewable electricity, installation mode and scale. However, as characteristics for technologies of electricity generation vary depending on renewable energy sources, the following points should be noted when setting the price and term for purchase.

Points to note in setting the purchase price

	Points to note
PV	<ul style="list-style-type: none"><li>• Apply different price ranges to mega solar power generation facilities and small-and mid-sized facilities.</li><li>• Differ pricing depending on the location of installations with a view to promote efficient use of land. (For example, apply a preferential price to electricity from installations in landfill aiming to promote use of landfill.</li><li>• Take account of not only module costs but also costs of</li></ul>



	peripherals and mounts.
Wind	<ul style="list-style-type: none"> <li>• Apply different pricing to on-shore and off-shore.</li> <li>• Apply different pricing to small wind-powered installations to promote small-sized wind.</li> <li>• Take account of poorer wind conditions and 20-30% higher construction costs in Japan than in Europe when setting prices.</li> </ul>
Geothermal	<ul style="list-style-type: none"> <li>• Set prices based on the size of installation as it is easier to achieve economy of scale.</li> </ul>
Small hydro	<ul style="list-style-type: none"> <li>• Set prices based on the size of installation as it is easier to achieve economy of scale.</li> </ul>
Biomass	<ul style="list-style-type: none"> <li>• Add electricity produced from biogas to the list of purchase under the FIT system with a view to promote efficient use of waste.</li> <li>• set preferential prices to those with high efficiency with a view to promote the use of biomass heating.</li> <li>• Set prices high enough to encourage the use of byproduct from lumber industry in the way not conflicting with existing lumber distribution system.</li> <li>• Set the sustainable standard for environment assessment including impact on ecosystem.</li> </ul>

- The timing of determining purchase price is also important. The time required for business development varies from 2 to 20 years depending on renewable energy sources. The later purchase price is set, the higher the uncertainty gets, possibly making it hard to start renewable electricity generation business. So the price should be determined when METI grants approval based on the business execution plan submitted by a installation operator. As for geothermal and wind, which take longer lead time for installation than other energy sources, the purchase price should be determined when permission for development is granted following the completion of environment assessment.

## (2) Review of the price and term for power purchase

- The Article 3 of the Act provides that the price and term for power purchase is to be revised every year (or every 6 months if necessary). PV requires frequent price review because PV equipment cost falls sharply in a short period, while geothermal and wind don't need price review very often as installation cost for such energy sources is not expected to decrease in a short time. The purchase price review at an appropriate interval works to keep profit at an appropriate level. However, when

it comes to renewable electricity generation which depends its profitability on the electricity purchase price, review of the price and term may increase uncertainty of electricity generation business.

- Lead time for renewable electricity business development varies depending on energy sources; geothermal takes about 10 years, wind 3-4 years while mega solar takes 6- 12 months and residential PV several months. If the price and term for purchase is reviewed every 6 – 12 months for the electricity generated from geothermal and wind, Installation operators can't make business plans because revenue outlook is uncertain.
- The cap on electricity purchase can be set in different ways: In France, different caps are set on different technologies. In Holland, the cap is based on budget while in Spain the cap on PV is set in every quarter and price is adjusted based on actual purchase to cap ratio. None of the above, however, is preferable because the number of installations could drop sharply in the middle of year, posing a huge risk on private investors.
- With all the above in mind, here are the proposals on price review.
  - Show purchase price estimate for years to come so that renewable electricity installation operators, investors and manufactures can make business projection and planning.
  - Review all renewable energy installations regularly based on evaluation reports substantiated by fact and data of price and installed capacity.
  - In addition to regular review, as for PV, price of which is expected to fall rapidly in a short term, define “triggers” of price review. To be specific, when the number of installations and the costs of installation are far off from the original assumption, the purchase price should be adjusted to the level sufficient enough to secure appropriate profit of Installation operators using a pre-defined adjustment method. Price adjustment method can be modeled after that of Germany: to adjust price decrease rate based on actual newly installed capacity in a preceding year.

Reference: Price decrease rate applied to PV electricity generation installations in Germany (effective Jan.2012)

With the base decrease rate set at -9% per annum, if newly installed production capacity registered in the preceding year is 500MW more or less than the originally assumed 3,000MW, price decrease rates are to be adjusted as below:

If installed capacity is more than the assumption -> Rates of decrease gets bigger by threshold	If installed capacity is less than the assumption -> Rates of decrease gets smaller by threshold
3,500MW : 3% (Total decrease rate : - 12%)	2,500MW : - 2.5% (Total decrease rate: - 6.5%)
4,500MW : 6% (Total decrease rate : - 15%)	2,000MW : - 5% (Total decrease rate: - 4%)
5,500MW : 9% (Total decrease rate : - 18%)	1,500MW : - 7.5% (Total decrease rate: -1.5%)
6,500MW : 12% (Total decrease rate : - 21%)	
7,500MW : 15% (Total decrease rate : - 24%)	

### (3) Others

- Add electricity from improved capacity of existing installation (repowered installation) to the list of purchase under the FIT, anticipating the addition could prompt repowerment and in turn help increase renewable electricity production. Repowerment here means replacement of key component of installation (turbine, water wheel, power generator, etc) in principle, though different standards have to be set by method of electrical power generation.
- The subsidy for building renewable electricity generation installation runs counter to the objective of FIT and thus should be abolished in principle. That said, with a view to fully utilize potential capacity of renewable electricity generation, a separate support system needs to be set up for funding business development feasibility study.
- Environment value of renewable electricity (CO2 reduction effect) primarily belongs to Installation operators and the use of renewable electricity (maintenance, sale in the form of green electricity certificate and sale to utility companies, etc) should be left to Installation operators. When setting purchase price (tariff), profitability has to be taken into account by converting the environment value into monetary value based on emission credit price in Europe, etc. As default rule, the environment value of renewable electricity is transferred to the purchasing utility companies. However it is also allowed for Installation operators to keep it and market it to others

if they prefer to do so (opt-out).

## 2. Guaranteed grid access and priority dispatch

### 1.1 Principle

- Stipulation of rules for the obligation to interconnect with and the priority dispatch of renewable electricity makes or breaks the success of FIT. In countries where FIT has been in place, it is commonly seen that the utility companies reject connection of renewable energy to their grids on the ground for adverse effects on stable supply through grid, etc. In order to prevent grid access of renewable electricity from being rejected by the arbitrary decision of utility companies, it is vital to set concrete rules and secure transparency in determination by the utility companies of grid access.
- Lack of the concrete time frame for, criteria for judgment of and standard procedures for determining grid access is posing investment risk (including funding cost increase) to and imposing operational costs on installation operators. So the matters pertaining to determination of grid access, such as criteria for judgment, time frame and procedures for determination and procedures, should be stipulated in a law.
- Once criteria and rules pertaining to determination of grid access are stipulated by a law, Installation operators become able to estimate grid access costs at a business planning stage. On the other hand, if criteria and rules are not set forth by a law and are left to discretion of the utility companies, Installation operators will not be able to estimate grid access cost and investment risk will increase.
- In grid access cost calculation, transmission cost should be separated from distribution cost and ask installation operators to share appropriate level of the costs.
- These principles are effective only when all the following factors are immediately regulated by clear-cut rules with clear ownership of responsibilities that are legally bound.

### 1.2 Proposals

#### (1) Guaranteed grid access

- The Article 4 of the Act sets forth exceptions to the obligation of the utility companies to enter into agreement to receive feed of renewable electricity if there is “a likelihood of unjust harm to the benefit of the utility companies”. Also, the paragraph 2 of the Article 5 of the Act sets forth exceptions to the obligation of the

utility companies to enter into agreement to connect installations generating renewable electricity if there is “a likelihood of the occurrence of damage to securing the smooth supply of electricity”. With that in mind, here are the proposals to prevent application of the provision based on arbitrary decision by the utility companies:

- Set guidelines, etc, to illustrate concrete examples where utility companies are allowed to reject interconnection.
- Require utility companies to publicize their reasons for rejection of interconnection on the Web, etc, as burden of proof for rejected interconnection is on the utility companies.
- The utility companies are called on to immediately connect the installation generating renewable electricity to their grid system at the shortest linear distance from the location of the installation upon request from the installation operator.

\*Reference: Related German law

German Renewable Energy Act, (“EEG”), Paragraph 1 of Article 5 (“§5(1)”

“Grid system operators shall immediately and as a priority connect installations generating electricity from renewable energy sources and from mine gas to that point in their grid system (grid connection point) which is suitable in terms of the voltage and which is at the shortest linear distance from the location of the installation if no other grid system has a technically and economically more favourable grid connection point...”

- A time frame should be set for the determination of the grid access so as to reduce risks of and burden on the installation operators.

EEG, §5(5)

“Insofar as it is necessary for the determination of the grid connection point and for the planning of the grid system operator in accordance with section 9, those interested in feeding in electricity and grid system operators must submit to each other, upon request and within eight weeks, the necessary documentation, in particular the grid system data required to test and verify the grid compatibility.”

Under the German Renewable Energy Act, installation operators and grid system operators are required to submit to each other the necessary documentation for the determination of the grid access within eight weeks.

- The types (and owners) of costs pertaining to grid access should be provided. In principle, the costs of connection up to grid access point are to be borne by Installation operators and the costs of grid enhancement are to be borne by the utility companies. However, when the utility companies want to use a grid access point which is not at the shortest linear distance from the location of the installation, additional costs of grid access should be borne by the utility companies to clarify who is responsible for the decision on grid access point.
- In order to guarantee the purchase, transmission and distribution of renewable electricity, utility companies should be required to immediately take necessary measures for grid access upon requests by installation operators for connection to their grid system.
- When the utility companies reject grid access citing potential risks of unstable power supply, they should be required to assume the burden of proof and to publicize the evidence and grounds for such risks.

EEG §9(1)

“Upon the request of those interested in feeding in electricity, grid system operators shall immediately optimise, boost and expand their grid systems in accordance with the best available technology in order to guarantee the purchase, transmission and distribution of the electricity generated from renewable energy sources or from mine gas. They shall inform the installation operator without delay as soon as the risk arises that technical control will be assumed over their installation in accordance with section 11(1) first sentence; the expected time, extent and duration of the control shall be communicated. The grid system operator shall immediately publish the information required in accordance with the second sentence above on his website and shall thereby describe the affected regions of the grid system and the reasons for the risk.“

Under the German Act, upon the request of Installation operators, grid system operators shall immediately optimise, boost and expand their grid systems in accordance with the best available technology in order to guarantee the purchase, transmission and distribution of the electricity generated from renewable energy sources.

(2) Priority dispatch

- Ensure to guarantee priority dispatch for electricity from renewable energy with a

view to make the most of renewable electricity. Allow to regulate electricity output from renewable energy sources only when no other choice is possible.

- The Article 13 of the Energy Industry Act of Germany stipulates the priority measures for ensuring safety and reliability of grids;
  - 1.Reduce congestion by switching transmission network, etc.
  - 2.Control loads by getting large companies to reduce power consumption as contractual obligation, implement congestion management, control power flow using backup power from grid system operator.
  - 3.Regulate electricity output from renewable energy sources by issuing load dispatch instructions

### (3) Damage compensation and other compensation

- The paragraphs 3 and 4 of the Article 5 of the Act provides that Minister of Economy, Trade and Investment issues an advice/order for connection when utility companies reject grid access by Installation operators without a just reason. It should be stipulated that Installation operators may demand compensation for the damage incurred due to the rejected grid access.

EEG, §10(1)

In the event that the grid system operator violates his obligations under section 9(1), those interested in feeding in electricity may demand compensation for the damage incurred. The liability to pay compensation shall not apply if the grid system operator was not responsible for the violation of the obligation.

- It should be stipulated that utility companies are obligated to pay Installation operators compensation for the losses coming from smaller volume of electricity purchase than contractual volume when utility companies call on renewable electricity installation operators to regulate electricity output for the sake of grid stabilization, etc.

EEG, §11

Notwithstanding their obligation in accordance with section 9, grid system operators shall be entitled, by way of exception, to take technical control over installations connected to their grid system ...

1. the grid capacity in the respective grid system area would otherwise be overloaded on account of that electricity,
2. they have ensured that the largest possible quantity of electricity from renewable energy sources and from combined heat and power generation is being purchased, and
3. they have called up the data on the current feed-in situation in the relevant region of the grid system.

EEG, §12(1)

The grid system operator whose grid system gives rise to the need for the assumption of technical control under section 11(1) shall compensate those installation operators who, on account of the measures under section 11(1), were not able to feed in electricity to the extent agreed upon. Where no agreement has been reached, the lost tariffs and revenues from the use of heat less the expenses saved shall be paid.

Under the German Act, the grid system operator shall compensate those installation operators who were not able to feed in contractual electricity upon a request from the grid system operator for electricity output regulation. Also, the German Act stipulates that only those installation with capacity of 100kW or more can be subject to electricity output regulation.<sup>5</sup>

(4) Cost sharing

- It is necessary to clarify the grid access cost sharing between installation operators and utility companies. In principle, feeder installation cost to the grid system point at the shortest distance should be borne by installation operators, and cost to enhance the grid should be borne by utility companies.

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<sup>5</sup> On the other hand, underfeeding due to output regulation for the sake of grid stabilization is not subject of compensation (Article 13, Energy Industry Act).



EEG, §13,14

Section 13 Grid connection

(1) The costs associated with connecting installations generating electricity from renewable energy sources or from mine gas to the grid connection point as defined under section 5(1) or (2) and with installing the necessary metering devices for recording the quantity of electricity transmitted and received shall be borne by the installation operator.

(2) If the grid system operator assigns the installations a different grid connection point in accordance with section 5(3), he shall bear the resulting incremental costs.

Section 14 Capacity expansion

The grid system operator shall bear the costs of optimizing, boosting and expanding the grid system.

Under the German Act, it clearly stipulates the items which shall be borne by installation operators and utility companies respectively in terms cost on grid system. It is notable that the German Act clearly stipulates grid system operators to bear additional cost when grid system operators ask installation operators to access to a grid access point other than the one at the shortest distance.

(5) Information disclosure on grid system and installation of feeder

- Backbone feeders should be installed and improved to maximize the potential in wind power resources at Hokkaido and Tohoku regions. To that end, it is necessary to study the option of unbandling of production and transmission of electricity and installing feeders under active leadership of the government.

Since installation of feeder requires a time-consuming process, concrete plan for coming 10 to 20 years for expansion of feeder should be developed as soon as possible by identifying regions with high supply potential in renewable energy with the help of potential survey etc. conducted by Ministry of Environment.

- Utility companies should publicize on the Web the latest data on congestion at regional grid and interconnection capacity to reduce the uncertainty on grid system and the cost relating to interconnection procedures.

Ontario Power Authority of Canada<sup>6</sup> and Nova Scotia Power publicize grid related data including renewable electricity interconnection capacity. Such data

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<sup>6</sup> <http://fit.powerauthority.on.ca/connection-availability-resources>

is accessible on the Web along with location information taking advantage of Google map. That allows preliminary screening of candidate locations for new renewable energy installation. .

### 3. Procedures, organizations

#### 1.1 Principle

- FIT is feasible only when the private investment is promoted for the expansion of renewable electricity volume, and it is absolutely necessary to clarify criteria and rules, and ensure objectivity and transparency of decisions. Therefore it is important to put every effort to make FIT a high predictable system for those who are involved in the renewable energy business through clarifying the criteria and rules of system and ensuring the objectivity and transparency of decisions as much as possible.
- Appropriate term and price for purchase are also indispensable factors for the investment, which requires comprehensive and quality data. Therefore it is necessary for the system operation to collect and disclose quality data.
- It is preferable to establish a third-party organization independent from utility companies for interconnection dispute settlement between a renewable electricity installation operator and an utility company, considering we cannot completely eliminate the possibility of unfair or uncertain decisions to be made by utility companies, which are competing with renewable electricity installation operators in the electrical power production business. Making decisions on the grid system by a third-party organization objectively can reduce investment risk for installation operations, and it can also contribute to a healthy and stable growth of the renewable energy market.

#### 1.2 Proposal

- Utility companies, installation operators and the Government should disclose all kinds of data regarding FIT for the implementation of fair and transparent procedure. Especially disclosure of data regarding grid system (interconnection capacity, congestion status, rationale if interconnection is refused, necessary period for the interconnection, etc.) is essential to eliminate the risk of arbitrary refusal of connection by utility companies. It is also important to ask installation operators to immediately provide details such as appropriate purchase price, introduction forecast of robust grid system, which are necessary for the healthy operation of FIT.

EEG §45, 52

Section 45 Basic principle

Installation operators, grid system operators and utility companies shall make available to each other without delay the data required for the nationwide equalization scheme in accordance with sections 34 to 39, in particular those referred to in sections 46 to 50. Section 38 shall apply mutatis mutandis. Data recorded and published in the Register of Installations to be established in accordance with section 64(1) first sentence no. 9 shall no longer be transmitted in accordance with sections 45 to 52 from the date of publication of the data.

Section 52 Data to be made public

(1) Grid system operators and utility companies shall publish on their website

1. any details in accordance with sections 45 to 49 immediately after their transmission, and
2. the report concerning the ascertainment of data they have provided in accordance with sections 45 to 49, without delay after 30 September of any given year, and retain this information until the end of the following year; section 48(1) shall remain unaffected.

(2) The information and the report must enable a qualified third party to fully understand the equalized quantities of electricity and tariff payments without further information being required.

In the German Act, installation operators, grid system operators, and utility companies are asked to provide and disclose information in principle, and their roles and responsibilities are clearly stipulated. In addition, grid system operators and utility companies are requested to publish details regarding purchase, transmission, etc. on their website within a certain period so that a third party can have access to such information.

- Electric Power System Council of Japan (“ESCJ”) is not appropriate as an organization to settle disputes regarding grid access from the perspective of independency from utility companies and transparency of decision-making; therefore it is necessary to establish a third-party organization newly.
- Guideline and rules are also needed for the promotion of efficiency of discussion on connection to ease the burden on both installation operators and utility companies.

- The Government should prepare and issue progress report covering information about installed capacity, electricity production volume, installation costs on a regular basis (for instance, on a quarterly basis) to confirm the progress of the FIT including status on designing term and price for purchase, status on dispute settlement interconnection, and outlook for renewable energy deployment..

#### 4. Others (Excursus)

It is vital to implement the following policies along with FIT system in order to promote renewable energy deployment

- ① Improve procedural efficiency of environment impact assessment, etc
- ② Establishment of independent organization, etc. for the steady implementation of various regulatory reforms regarding renewable electricity production and the management of the progress
- ③ Early target setting for the introduction of renewable energy. Target should be feasible but bold, incorporating a wide range of views from the general public.
- ④ Steady implementation of separation of production and transmission
- ⑤ Steady implementation of electricity system, and study on reform and restructuring of regulatory.