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How Institutional Factors Affect Renewable Energy Policy—A Case Study of Ontario Feed-In-Tariff Programs[1]

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From the perspective of institutionalism, government behaviors are influenced by rules, institutions and regulations instead of alienated ones. In terms of the area of renewable energy field, government policy (energy storage and energy transformation) is subject to political system, market system and stakeholders. Institutional factors have direct bearing on renewable energy. Policy stability and investment risk directly impact the sustainable development of renewable energy industry. Feed-in-tariff (FIT) programs in Ontario are generously subsidized by Ontario government, which lays the foundation for the energy transition in 2014 when Ontario realized zero-coal electricity generation. From 2007 to 2017, FIT experienced ups and downs in Ontario. It experienced institutional discontinuity and exhaustion according to Streeck and Thelen (2005). Three institutional factors have contributed to the demise of FIT in Ontario: the robust development of electricity generation technology and the nuclear power, government prioritizing other programs in planning and sanctioning, stakeholders objecting FIT for exorbitant price.

Keywords: policy change, institutional change, renewable energy, wind energy, Ontario, FIT

The thing that never changes is change itself. Researchers in public policy field are always seeking to explain why policy change takes place after remaining static for many years. Bennett and Howlett (1992) stated the definition that "policy change refers to incremental shifts in existing structures, or new and innovation policies" (Cerna, 2013, p. 4). Institutional change is a typology developed by Streeck and Thelen (2005) in which policies are analyzed like institutions because "they constitute rules for actors other than for policy-makers themselves, rules that can and need to be implemented and that are legitimate in that they will if necessary be enforced by agents acting on behalf of society as whole" (Streek & Thelen, 2005, p. 12). Compared with other theories, like Policy Streams by Kingdon (1995), Punctuated Equilibrium and Advocacy Coalition Framework by Baumgartner and Jones (1993), the theory of institutional change is extremely influential in explaining and interpreting policy change for its explicit categorization under different conditions. Renewable energy normally represents the great opportunity to a sustainable energy economy. In such a field of frequent policy change, institutional change is instrumental to define the intricate state of renewable energy policy based on which we can further explore how institutions/policies are affected by other factors.

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Canada is ambitious and progressive in terms of developing renewable energy and establishing itself as a global leader in this respect. Though electricity generation is still the fourth largest source of carbon emission, Ontario has become a pioneer and exemplar in renewable energy governance. On April 15, 2014, Ontario was the first province in North America with zero carbon emission in electricity generation and reduced over 30 million tons of carbon emission annually, which amounted to the carbon emission of seven million cars. Institutionally, Ontario banned coal electricity permanently via Ending Coal for Cleaner Air Act on December 13, 2015.

Feed-In-tariffs (FITs) are major contributors of Ontario's renewable energy policy image. Starting from 2007, with a life span over a decade, it ceased to be renewed in 2018. Judging from the development track of FITs in Ontario, they markedly reflect the complexities of renewable energy development and governance. In virtue of FITs in Ontario as a case study, the research conducts qualitative analysis and answers the following questions: (a) What kind of policy change it is for FITs in Ontario? (b) Apart from government policies, what other factors can be attributed to the demise of FIT programs? (c) How did the termination of FIT programs happen in Ontario? The author argues that **grid and market competition of electricity techniques, government planning systems, and stakeholder's attitude** are three major institutional factors causing the discontinuity and exhaustion of FITs in Ontario.

Canadian Context

As an energy self-reliant country, it is self-evident that energy industry holds a significant position in Canada's national development. Canada ranked sixth in total primary energy production, accounting for 3% of the entire world in 2015 (Natural Resources Canada, p. 2). According to Statistics Canada (2020), Canada is the world's third largest country in power generation of recyclable energy since 2013. In 2017, renewable energy generated 85% of the entire electricity power among which hydroelectricity made up 56%, wind energy 9%, nuclear energy 9%, and other renewable energy 11%. Highly developed hydroelectricity empowers Canada great potential to realize national energy transition. "A global transition to clean and renewable energy represents a significant opportunity for the nation" (Clean Energy Canada, p. 4). "It is time to stand up and show others how Canada can lead globally on all fronts, including energy supply, innovation and efficiency, as well as clean energy and addressing climate change" (Redford, 2012). Indeed, Canadian federal government had taken up measures and issued a series of acts to seize the opportunity and establish itself a global leader in renewable energy governance. In 2016, *Pan-Canada Framework on Clean Growth and Climate Change* was released as a national guideline and Canada joined the Mission Innovation, a global initiative including EU and other 22 countries to promote clean energy innovation.

"Clean, non-emitting electricity systems will be the cornerstone of a modern, clean growth economy" (Government of Canada, p. 11). Global renewable energy policies are concentrated on renewable electricity generation, including FIT, renewable portfolio standard (PRS), net metering, subsidy support and green price. In Canada, the transition from coal energy to renewable energy has brought about a clear and dramatic decrease in carbon emission, 39% decrease from 2000 to 2016, which mainly was the result of Ontario's successful implementation of Coal Phase-Out Action Plan. Compared with other provinces, the reason why Ontario succeeded in electricity generation with zero carbon emission is the efficient policy agenda-setting and implementation on renewable energy, making various types of renewable energy more and more influential in the entire electricity production blueprint. FITs are one of the most representative programs from 2009 to 2018

and its termination has stirred huge debate. A FIT is "one of the most effective ways to jump-start renewable energy production and adoption by rewarding small and medium scale producers, as well as industrial scale producers of green power" (Saidur, Islam, Rahim, & Solangi, 2010, p. 1748). However, when it comes to the implementation, it is a double-edged sword for governments and the renewable energy technologies (RETs). "FITs provide long-term financial stability for investors in RETs, …on the other hand, if not properly designed, FITs can be economically inefficient" (Lesser & Su, 2008, p. 981).

Literature Review

The policymaking of electricity policies and the like are susceptible to different stakeholders. Fossil fuel companies, environmental-friendly NGOs, electricity companies and the public all attempt to manipulate policies and divert them into the most favorable direction for their own benefits. How provincial governments realize the transformation and innovation of policies is a strenuous test for their capability of policy analysis, policymaking, and governance. The existing literatures concerning the policy-changing, particularly renewable energy policies, are concentrated on two aspects—intricate stakeholders and tremendous policy difficulties.

First of all, in effect, the development of renewable energy is not only closely related to the natural resources of the province, but also a product of political competition among various parties. Ferguson-Martin and Hill (2011) studied how wind energy was utilized and deployed in four Canadian provinces and concluded that wind energy and its utilization are influenced by direct factors like "grid architecture, ownership patterns, renewable incentive programs, planning approvals processes and stakeholder support and opposition" and indirect causal factors like "landscape values, political and social movements, government electricity policy, provincial electricity market structure and incumbent generation technology" (p. 1647). Stokes taking FIT in Ontario as a case synthesized the complexities and summarized them as four political tensions: high-level support versus public support, asymmetric information, policy stability versus policy adaptation, and multiple jurisdictions over jobs and innovation.

In addition, renewable energy policies experience more turmoil due to its demanding technical standards and policy coordination. Scholars are keen about the challenges confronting Canadian provinces when it comes to energy upgrading. Holburn (2012) observed that companies should take governmental regulatory risk into consideration when evaluating the investment risks because "regulatory uncertainty and policy instability act as barrier to renewable energy investment" (p. 654). Through a comparative study of renewable energy policies in Ontario and Texas, Holburn further argued that risks are lower for energy companies in jurisdictions where local regulatory agencies are more autonomous and policymaking abides by rigid procedures. In 2010 Ontario failed to meet its investment goal of 2003 whereas Texas has surpassed its goal of 2015. In this case, renewable energy in Ontario was fraught with more regulatory risk for "tight coupling between agencies and political institutions" and "policy processes that permit rapid policy change" (p. 659). Likewise, Richards, Noble, and Belcher (2012) deployed a case study of wind energy in Saskatchewan, Canada, to depict a full picture of barriers by means of a multi-dimensional approach. With the auspices of Trudgill's (1990) AKTESP theoretical framework, they maintained that knowledge barrier is the largest predicament for renewable energy development among "agreement, knowledge, technology, economic, social, or political factors" (p. 692).

Based on the previous literatures, it can be easily found out that government is one integral parts of the entire renewable industry chain. Governmental regulation can be categorized as political or indirect factors.

However, the dynamics between government regulations and other factors have seldom been explored. FIT programs in Ontario belong to renewable incentive programs, which constitute the prerequisites for renewable energy industry flourishment. They are institutional factors along with electricity market structure, stakeholder attitude, grid infrastructure. Ontario's FITs have evolved during its decade of life and they culminate with remarkable achievements. In 2018, wind energy capacity in Canada reached 12,816 trillion megawatt (MW) and Ontario is the top of ten provinces and three territories accounting for 39.6% of the overall output. This thesis is intended to answer **what and how** other institutional factors affect political decisions concerning renewable energy. Using Ontario FITs as a case to exemplify the complexities of policymaking is efficient because it shows us tellingly that the only constant variable is change itself.

Theoretical Framework

Government behaviors in many contexts fail to provide reasonable explanations or legitimacy for governance phenomena. New institutionalism vehemently criticized the traditional behaviorists to refer to behavior as the sole source of explanation for all the phenomena of government. They emphasize the behaviors must be understood in the context of institutions. Institutions for political scientists are vital collection of rules and practices. "Institutions empower and constrain actors differently" (March & Olsen, 2008, p. 4). Streeck and Thelen (2005) list the typology of policy change concerning results and processes (see Table 1), as well as specific contents (see Table 2).

Table 1

Typology of Results and Processes

		Result of change	
		Continuity	Discontinuity
Process of change	Incremental	Reproduction by adaptation	Gradual transformation
	Abrupt	Survival and return	Breakdown and replacement

Note. Source: Streeck and Thelen, 2005, p. 9.

Table 2

Typology of Contents

Displacement	Traditional arrangements are replaced by new institutions.
Layering	Amendments, additions, or revisions to existing institutions.
Drift	Institutional erosion or atrophy for lack of timely adaptation to changing environment.
Conversion	Shift towards new directions, goals, functions due to new environmental challenges.
Exhaustion	Gradual collapse and ultimate breakdown of institutions.

Note. Source: Streeck and Thelen, 2005, pp. 20-31.

When FITs in Ontario put under the lens of institutional change, obviously, they experienced incremental policy discontinuity and specifically, institution exhaustion. The next step is to interpret how and why this demise could happen.

In the context of renewable energy policies, institutions can be visualized as "decision-making structures, forms of organization of wind power, planning systems and norms and agreements, which underpin wind power policy and practice'' (Toke, Breukers, & Wolsink, 2008, p. 1130). Toke et al. (2008) conduct systematic and comparative studies on wind deployment in Europe. By proposing a new analytical framework, they

innovate a comprehensive trajectory to interpret and explain outcomes of policy implementation in renewable energy. According to the analytical framework of Toke et al. (2008), as direct influential factors, renewable incentive program is subject to other three factors: (a) incumbent generation technologies and grid architecture, (b) planning and approvals, (c) stakeholder support and opposition. The first two respects plus the program itself determine the financial applicability and the last respect decides the social acceptability of the policy.

Methodology

Considering the academic vacancy in existing literatures, this paper is hardly transformative judging from research method. However, judging from the theoretical framework, a combined perspective of institutionalism and institutional change, this paper is intended to interpret how policy change in renewable energy takes place and what factors may contribute to policy change of specialized programs. As a case study, it contributes to the generality of Toke and his colleague's study in 2008. Meanwhile, it attests to the practicality of Streeck and Thelen's institutional change typology.

This is an explanatory research with institutional factors considered independent variables and the result of institutional exhaustion the dependent variable. By historically tracing back the development of FITs, this paper provides a panoramic review of how once a rigorous policy came to an end. A qualitative analysis of FIT programs in Ontario is the target of this case study. The majority of data is qualitative data like policies, projects, and plans from official government websites—Ontario Energy Board, Statistics Canada so on and so forth which are primary sources. The author also uses first-hand quantitative data from Statistics Canada and Independent Electricity System Operator etc. In terms of second-hand resource, the author turns to the help of roughly 50 academic papers written by peer scholars in relevant field of policy change, institutionalism and renewable energy policy. The data analysis method adopted is mainly qualitative analysis because in public policy, it is more effective to interpret and analyze compared with quantitative analysis.

As for the concrete analysis, first, the author analyzes a fundamental variable, the grid structure in Ontario utilizing data from the authorities in order to reflect the objective competitiveness of wind energy and solar energy in the electricity market. Then the author analyzes government planning, the governmental behavior concerning FITs in order to reveal the high regulatory risk for renewable energy in Ontario. Lastly, the author extrapolates how public attitude sways government decision, accounting for the termination of FITs in Ontario.

Discussions

Overview of FITs in Ontario

FIT programs as a form of **renewable incentive program** are essentially controversial because they are transition of governmental resources into the hands of other economic actors (companies and houseowners). FIT targets wind energy and solar energy. The development of FITs heavily depends on government support in the aspect of finance, institution and education.

Ontario's FIT programs were initiated in Ontario Renewable Energy Standard Offer Programme (RESOP) in 2007, focusing on the development of wind energy and solar energy. It was politically significant as the first pricing system of renewable electricity with governmental support in North America. It can provide stable price for producers under long-term contracts. FITs in Ontario officially came into effect along with the

implementation of 2009 Green Energy and Green Economy Act and the pricing, scale and approving process were set up (see Table 3). The purpose of FIT programs is "to encourage and promote greater use of renewable energy sources, including on-shore wind, solar photovoltaic (PV), bioenergy (biomass, biogas and landfill gas) and hydroelectricity for electricity generating projects in Ontario" (4.0 FIT program).

Table 3

Comparative Overview of FITs in Ontario

	FIT	Micro FIT
Designed for…	Small, medium or large renewable energy generation projects.	A person (generally a homeowner, farmer or small business owner), developing a very small or "micro" renewable energy generation project on their property.
How it works…	Under the FIT program, you will be paid a guaranteed price for all the electricity your project produces for 20 years (40 years in the case of a hydroelectric project).	Under the micro FIT program, you will be paid a guaranteed price for all the electricity your project produces for 20 years (40 years in the case of a hydro electric project).
Project size…	More than 10 kilowatts.	10 kilowatts or less.
Licensing and license fees	No licence is required for facilities that have a capacity of 500 kW or less. For facilities that have a capacity of more than 500 kW but no more than 10 MW, there is a licence application fee of $100. For facilities that have a capacity of more than 10 MW, the licence application fee is $1,000. There is also an annual registration fee of $800.	No licence is required.
Metering requirements and account treatment	Metering requirements will depend on how you choose to connect (in series, in parallel, or directly to the distribution system). A separate generator account is required, regardless of connection configuration.	Metering requirements will depend on how you choose to connect (in series, in parallel, or directly to the distribution system. A separate generator account is required, regardless of connection configuration.

Note. Source: Ontario Energy Board[2].

From December 2016, this visionary and groundbreaking program was terminated officially and no applications would be accepted. On July 13th 2018, Greg Rickford, Minister of Ontario Ministry of Energy, signed a directive again "to immediately take all steps necessary to wind down all FIT 2, 3, 4 and 5 contracts where the Independent Electricity System Operator (IESO) has not issued Notice to Proceed" (p. 4).

Grid and Market Competition of Electricity Techniques

If applying the institutionalism into the analysis of renewable energy policy, objective facts are the primary target and basis for policy analysis. "Policy actors require the ability to collect and aggregate information in order to effectively develop medium- and long-term projections, proposals for, and evaluations of future government activities" (Howlett, 2009, p. 157). Knowledge about energy structure is significant for policymaking. For example, wind energy is initially developed with the purpose of substituting coal electricity and reducing carbon emission. Besides, the promotion of wind energy is easily susceptible to other renewable energy. Hydroelectricity and nuclear energy are strong competitors and they will definitely squeeze the portion of governmental subsidies of wind and solar energy.

[2] Retrieved from https://www.oeb.ca/industry/tools-resources-and-links/information-renewable-generators/what-initiatives-are-available

The IESO is the principal institution of Ontario's power system. Its services in electricity industry cover "managing the power system in real-time, planning for the province's future energy needs, enabling conservation and designing a more efficient electricity marketplace to support sector evolution" (http://www.ieso.ca/). As the center of the whole system, IESO is a comprehensive data base providing knowledge-based suggestions for governments.

IESO has been required to "cease accepting applications under the FIT program by December 31, 2016 and any unallocated procurement target at the end of that procurement process will remain unallocated" (IESO, 2017, p. 4). According to its executive directive, the policy change in FITs was because "Ontario's current contracted and rate regulated electricity resources are sufficient to satisfy or exceed forecasted provincial needs for the near term" and that in reality there are other substitute means of "meeting future energy supply and capacity needs at materially lower costs than long-term contracts that lock in the prices paid for these resources" (Rickford, 2018, p. 3; see Figure 1).

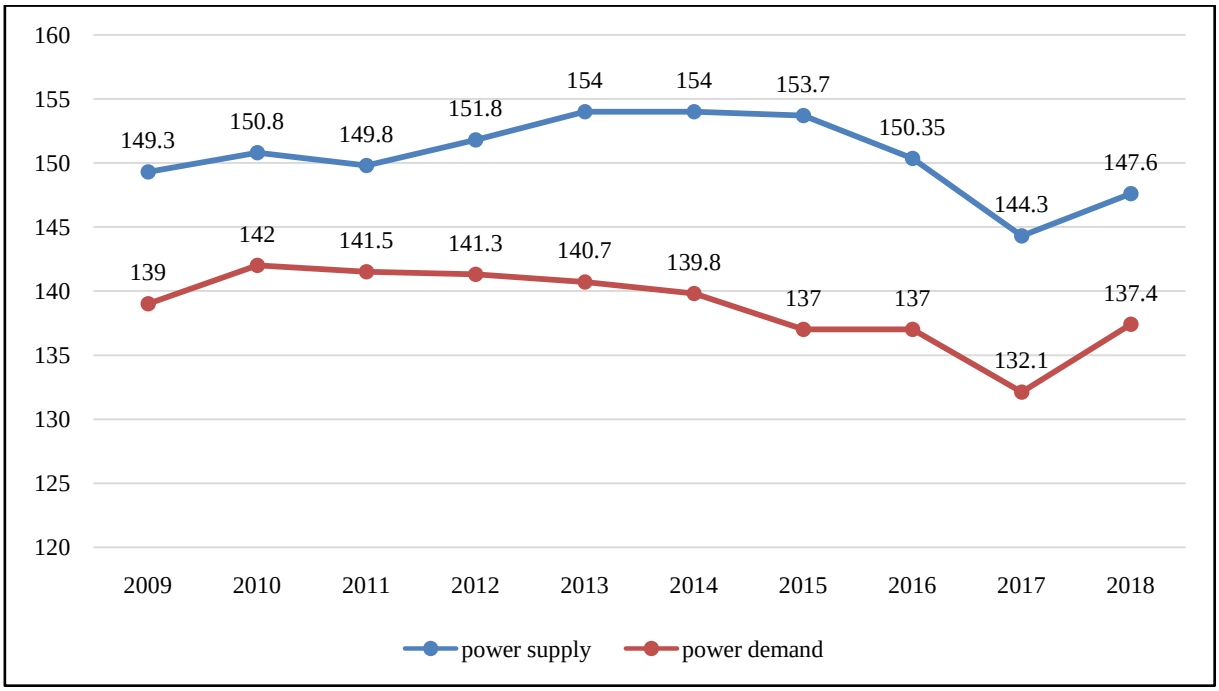

Figure 1. Supply and demand for electricity in Ontario (TWH) (Source: Reliability Outlook[3], March 2019).

Technically, another underlying reason for the extinction of FITs is the fierce competition from other kinds of renewable energy for decreasing market demand of electricity power. "While demand for participation in the FIT has remained strong, the need for additional generation is low. Ontario's energy consumption has declined every year but one since 2008, and today stands at 1997 levels" (Life After FIT, 2017). For a long time, renewable energy (mainly nuclear energy, wind energy and solar energy) has taken larger market share. Nonetheless, nuclear energy which is not the target of FITs has become dominant as the first type of energy output (see Figure 2). Comparatively speaking, FITs which regard wind energy and solar energy lost their development urgency in policy planning and implementation.

[3] Retrieved from http://www.ieso.ca/Power-Data/Supply-Overview/Transmission-Connected-Generation

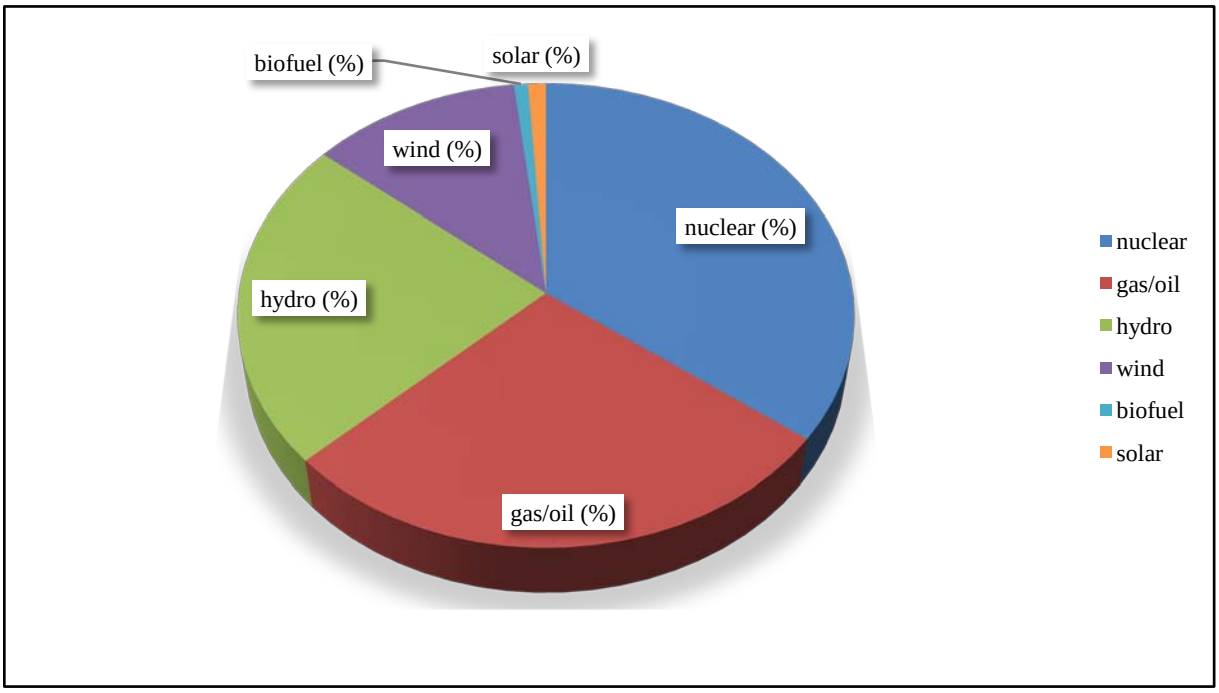

Figure 2. Installed capacity of Ontario energy (March 2019) (MW) (Source: Reliability Outlook[4], March 2019).

Government Planning and Approval

Planning and approvals emphasize the power of government inflicted by regulations. Unnecessarily and excessively prolonged approval procedures not only reduce the efficiency of policy implementation, but also frustrate the enthusiasm of companies. Direct and hierarchical regulation is another obstacle which increases the uncertainty and instability of policies.

Institutional planning and approval from the government traditionally have a big say in clean energy development. Tedious and unnecessary approval procedures will diminish the efficiency of a policy; overly direct regulation will enhance the instability of a policy; less long-term plans will bring about more short-term adjustment, which makes the policies less reliable and more dangerous in the eyes of investors. In the history of FITs in Ontario, developers had complained of the process before 2009, and "some organizations believe that as many as 50% of projects were not approved or were delayed so long that the project became uneconomical" (Weis & Ratchford, p. 5). In the wake of 2009 Green Energy and Green Economy Act, the process has been streamlined and simplified: Municipal approval has been dismissed and a single institution was erected, namely, Renewable Energy Facilitation Office (REFO) to coordinate all those intricate approvals. An independent agency Ontario Power Authority (OPA) was established under the direction of 2004 Electricity Restructuring Act and "has been tasked with forecasting Ontario's energy demand developing an overall strategic plan for conservation, generation and transmission, and awarding long-term contracts to private generators to secure sufficient capacity" (Holburn, p. 659).

Besides, in terms of personnel and accountability, since the 1998 Electricity Act, the Minister of Energy in Ontario is entitled to govern the renewable energy of the entire province endowed with the right to enact,

[4] Retrieved from http://www.ieso.ca/Power-Data/Supply-Overview/Transmission-Connected-Generation

amend and cancel all the related programs via policy directives. Policy directives are powerful and have a direct bearing on FITs, pricing and electricity procurement. For example, Minister of Energy can demand OPA to initiate or terminate programs without consultancy. Secondly, Minister of Energy controls OPA through the appointment process. The board of directors of OPA is appointed by the Minister. Hence, they are subordinated to the orders and preferences of OPA. Lastly, OPA is subject to provincial legislation which is a single-chamber system controlled by the government. OPA is coerced to make policies consistent with the minister's will in case of being punished or substituted (Holburn, 2012).

Generally speaking, the power of the minister of energy is without checks and balances, which buries the bane for this whole planning and approval to be capricious and controversial. First of all, the Minister of Energy can freely intervene the policymaking process in setting targets or changing agendas. Secondly, the Ontario Energy Board (OEB) is incapable of revising the minister's decision or monitor existing government policies independently due to its mandate to be "consistent with the policies of the government of Ontario" (Green Energy and Green Economy Act, 2009). For example, in January 2009, the OPA has to restart the tariff program for biogas because the Minister was lobbied by the biogas industry (OPA, 2009). In late 2009, the Minister ordered new FITs which were faced with backlash from the public for favoring the developers. Suddenly, in mid-2010, the tariffs were reduced by 20% for solar projects (OPA, 2010). Afterwards, FIT was abandoned for off-shore wind projects in early 2011 without official explanations (OPA, 2011).

In the future, Ontario's electricity development is based on the Conservative First Initiative. Several other plans are designed to reduce its energy requirements, for example, reserve experimental projects, electrified transportation, carbon taxing. New experimental programs will replace FITs to set up new pricing mechanisms. Therefore, the demise of FITs in Ontario is the inevitable result of institutional planning at will.

Stakeholder's Attitude

Stakeholder's attitude impacts the acceptability of government policies, and in the long term, the authority of governments. "A policy implemented without a reasonable level of public support will have difficulty time succeeding and the governments that implement them may have trouble finding support from the public they need to re-elect them" (White, Lunnan, Nybakk, & Kulisic, 2013, p. 2).

In the case of Ontario, this has something to do with Ontario's special electricity market—a hybrid market which is combined with big companies and small producers. In general, Crown Corporation Ontario Power Generation (OPG) is in charge of producing most of the electricity. The 1998 Energy Competition Act is a fundamentally decisive paper for the wind power deployment in Ontario and makes "almost all of the wind energy development in Ontario has been carried out by the private sector" (Ferguson-Martin & Hill, p. 1653). Companies invest in wind power in the pursuit of profits whereas government's policies aim to improve social welfare and people's well-being. In the area of energy, it is energy security, energy supply, energy affordability and sustainable development that government is concerned with. As the Minister of Energy of Ontario has said in the 2016 executive directive, "Our government is committed to ensuring that Ontario has an affordable and reliable electricity system and to acting in the best interests of all Ontario electricity ratepayers, including homeowners and businesses" (Rickford, 2018, p. 3).

Apart from the electricity companies and governments, the public is also a crucial stakeholder, at least for the government. The energy affordability is a factor the government must take into consideration when it comes to amending and adjusting energy policies. The reason why FITs are cancelled is largely due to the burdensome

price it has imposed on the public. The opponents of FITs believe that people have suffered from the high electricity price because the government has been too generous when it signed all those FIT contracts. “The auditor general said in 2015 that consumers have had to pay an extra $9.2 billion because of those 20-year, guaranteed-price contracts for wind and solar power” (Zochodne, 2016). Ontario Federation of Agriculture (OFA), a long-term coalition member of supporting government’s clean energy policies, has criticized that “the FIT policy harshly hurt the interests of farmers, and profit margins should decrease from 11% to 7.5% and that prices should be capped at the projected cost of electricity imports in six years” (Ontario Federation of Agriculture). From 2009 to 2016, the province of Ontario has issued five FIT programs but the procurement has been violently unstable due to some pressure from the companies, the Minister and the public (see Figure 3).

Pressure towards social well-being, namely, the energy affordability, put the final nail to the coffin of FITs in Ontario. Gradually shutting FITs down would save financial expenditure for governments from the extra contracts. Meanwhile, consumers, the public would be relieved from paying for those unnecessarily expensive solar and wind infrastructure. The policy exhaustion is a definite reflection of the attitudes of stakeholders.

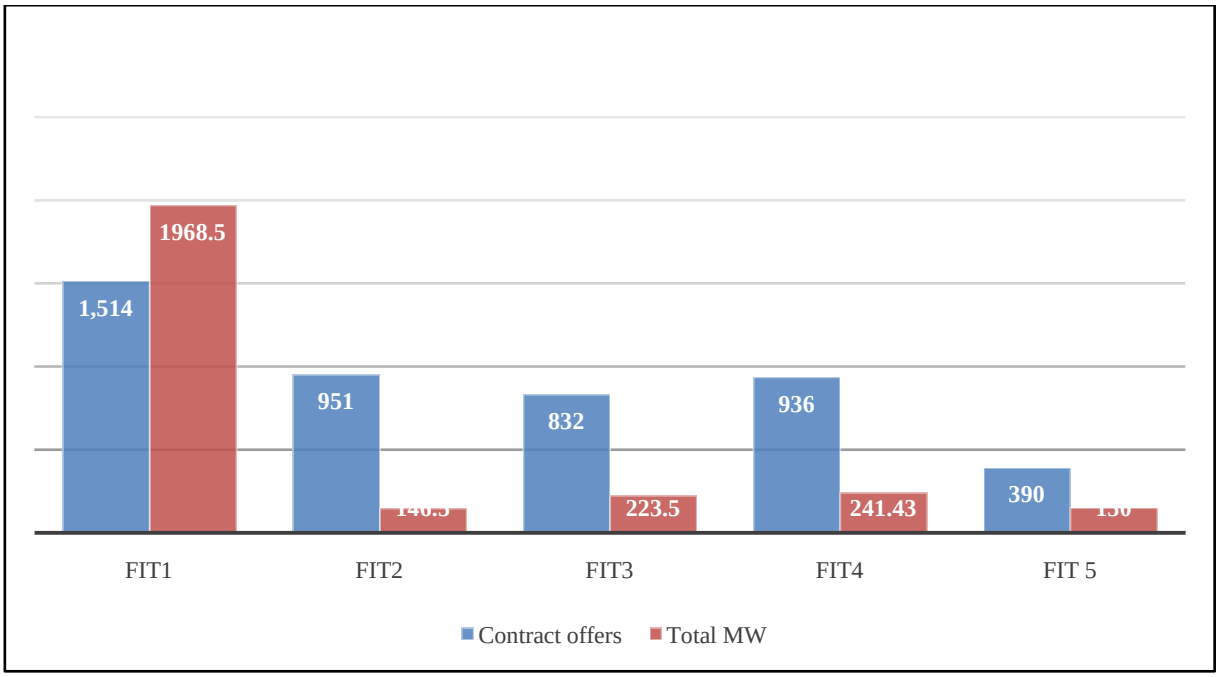

Figure 3. FIT in different periods (Source: IESO, FIT Archive[5]).

Conclusions

As a pioneering program in renewable energy, especially wind and solar energy employment, FIT programs in Ontario have experienced ups and downs. From the zenith of popularity to the nadir of decease, the life of a policy is as dramatic as it can be. Applying the typology of Streeck and Thelen (2005), FIT in Ontario has fortunately experienced policy discontinuity in an incremental manner. The gradual transformation of FIT contracts, which is reflected in the decreasing contract number, at least guaranteed a stable environment for the burgeoning rise of renewable energy in Ontario for over a decade. There is no denying the fact that at some

[5] Retrieved from http://www.ieso.ca/en/Sector-Participants/Feed-in-Tariff-Program/FIT-Archive

point the decisions for FIT specifics are still abrupt and unpredictable, though. Applying Toke and his colleague's institutional framework, a result from their study on European employment of wind energy, helps the author to explicitly analyze the institutional factors influencing the outcome of FIT programs. As a renewable incentive program, FIT is easily impacted by three other factors in the system of renewable energy policymaking. They are (a) incumbent generation technologies and grid architecture, (b) planning and approvals, (c) stakeholder support and opposition. The first two decide financial practicality and the last one social acceptability.

Incumbent generation technologies and grid architecture have a direct bearing on the electricity market. "While consistent policy is important to creating market stability, energy policy must also have sufficient flexibility to adapt to the rapid development of technologies and subsequent changes in market viability" (Miranda, 2010, p. 9). According to the executive directive, Ontario has sufficient electricity supply of hydroelectricity and nuclear power. Wind and solar power account for small proportion of the entire market. Besides, the electricity power covered by the already signed FIT contracts could satisfy more than the provincial needs at least in the short run. Government planning and approvals decide whether a policy has a clear direction and resilience. In the future, Minister of Energy in Ontario and OPA have planned other types of energy programs which could provide stable electricity at a relatively lower price. When an authoritative government has made up its mind, basically, there is no way anyone could bring FIT back to life in Ontario. Not to mention the public's overt resent for FITs. They criticized them as medium for companies to make profits because governments capriciously signed generous contracts with energy developers, leaving consumers pay the high price for electricity. To be honest, in the later period, the public was never fan of FIT. Rather, they desired FIT to be terminated. Therefore, Ontario government has to take into three perspectives into consideration and signing long contracts to buy electricity at a stably high price would be removed as a choice.

References

Baumgartner, T. J., & Jones, E. H. (1993). *Agendas and Instability in American Politics*. Chicago: University of Chicago Press.

Bennett, C., & Howlett, M. (1992). The Lessons of Learning: Reconciling Theories of Policy Learning and Policy Change. *Policy Sciences, 25*, 275-294.

Cerna, L. (2013). The Nature of Policy Change and Implementation: A Review of Different Theoretical Approaches. *Organisation for Economic Cooperation and Development (OECD) Report*, 492-502.

Clean Energy Canada. (2012). *Towards a Clean Energy Accord*.

Ferguson-Martin, C., & Hill, S. (2011). Accounting for Variation in Wind Deployment Between Canadian Provinces. *Energy Policy, 39*, 1647-1658.

Government of Canada. (2016). *Pan-Canada Framework on Clean Growth and Climate Change* (pp. 1-86).

Holburn, G. (2012). Assessing and Managing Regulatory Risk in Renewable Energy: Contrasts Between Canada and the United States. *Energy Policy, 45*, 654-665.

Howlett, M. (2009). Policy Analytical Capacity and Evidence-Based Policy-Making: Lessons From Canada. *Canadian Public Administration*, *52*(2), 153-175.

Kingdon, J. W. (1995). *Agendas, Alternatives, and Public Policies*. New York: Harper Collins College Publishers.

Lesser, J. A., & Su, X. J. (2008). Design of an Economically Efficient Feed-In Tariff Structure for Renewable Energy Development. *Energy Policy, 36*, 981-990.

Life After FIT: Ontario Quietly Pulls the Plug on Its Feed-In Tariff Program. 6 January 2017. Retrieved from http://www.lifecoop.ca/blog/2017/1/6/life-after-fit-ontario-quietly-pulls-the-plug-on-its-feed-in-tariff-program

March, J. G., & Olsen, J. P. (2008). Elaborating the "New Institutionalism". Oxford Handbooks Online. doi:10.1093/oxfordhb/9780199548460.003.0001.

Ministry of Energy. (2009). Directive to Ontario Power Authority on January 23, 2009.

Miranda, T. (2010). *Designing a National Renewable Electricity Standard: Five Key Components* (pp. 1-16). Washington, DC: Carnegie Endowment for International Peace.

Natural Resources Canada. (2018).*Canada Energy Fact Book 2018-2019*.

Ontario Federation of Agriculture. (2011). The Green Energy Feed in Tariff Review: Recommendations of the Ontario Federal of Agriculture.

Ontario Government. (2009). *Green Energy and Green Economy Act*, S.O. 2009, Sched. D, s. 1. Retrieved from https://www.npcc.org/content/docs/public/program-areas/rapa/government-regulatory-affairs/ontario-green-energy-and-green-economy-act.pdf

Ontario Power Authority. (2009). Directive to Ontario Power Authority on January 23, 2009. Retrieved from http://www.powerauthority.on.ca/sites/default/files/page/8659_Jan_23,_2009.pdf

Redford, A. (2012). We Rise Together or We Fall Together. *Policy Options*, February 2. Retrieved from https://policyoptions.irpp.org/magazines/sustainable-energy/we-rise-together-or-we-fall-together/

Richards, G., Noble, B., & Belcher, K. (2012). Barriers to Renewable Energy Development: A Case Study of Large-Scale Wind Energy in Saskatchewan, Canada. *Energy Policy, 42*, 691-698.

Rickford, G. (2018). Wind Down of Feed-in Tariff and Large Renewable Procurement Contract. *Ministerial Directives*, July 13.

Saidure, R., Islam, M., Rahim, N., & Solangi, K. (2010). A Review on Global Wind Energy Policy. *Renewable and Sustainable Energy Reviews, 14*, 1744-1762.

Statistics Canada. (2020). Table 25-10-0022-01 Installed Plants, Annual Generating Capacity by Type of Electricity Generation. https://doi.org/10.25318/2510002201-eng.

Stokes, L. (2013). The Politics of Renewable Energy Policies: The Case of Feed-In Tariffs in Ontario, Canada. *Energy Policy, 56*, 490-500.

Streeck, W., & Thelen, K. (2005). Introduction: Institutional Change in Advanced Political Economies. In W. Streeck and K. Thelen (Eds.), *Beyond Continuity: Institutional Change in Advanced Political Economies* (pp. 1-39). Oxford: Oxford University Press.

Toke, D., Breukers, S., & Wolsink, M. (2008). Wind Power Deployment Outcomes: How Can We Account for the Differences? *Renewable and Sustainable Energy Reviews, 12*, 1129-1147.

Trudgill, P. (1990). *Barriers to a Better Environment: What Stops us From Solving Environmental Problems?* London: Belhaven Press.

Weis, T., & Ratchford, C. (2009). *Submission to Nova Scotia Renewable Energy Stakeholder Consultation Process*. Ecology Action Centre & Pembina Institute.

White, W., Lunnan, A., Nybakk, E., & Kulisic, B. (2013). The Role of Governments in Renewable Energy: The Importance of Policy Consistency. *Biomass and Bioenergy, 57*, 97-105.

Zochodne, G. (2016). QP Briefing. Ontario Short-Circuiting Small Green Power Projects. *Founding Portal*, December 26. Retrieved from https://fundingportal.com/grants101/qp-briefing-ontario-short-circuiting-small-green-power-projects/