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## **Policymaking Function for the Creation of Renewable Energy Business by Community-based Corporations**

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### **Abstract**

Japanese community-based corporations (CBCs) can impact diverse regions when they work with regional corporations to implement renewable energy projects. Their activities are integrated and thus have particular relevance in energy policy and project outcomes because the CBCs include both non-profit organisations and corporations that are political advocates and sustainable businesses. The research result of four policymaking processes suggested that CBCs' direction indicates two features: First, the CBCs include both non-profit organisations that are political advocates and corporations that are sustainable businesses in each phase of regional industrial creation. Second, CBCs can manage projects that combine policymaking and market development simultaneously and integrate their results over the long term. Local municipalities can utilise the model linking policy formation and business impacts to integrate the business management approach into policymaking.

**Keywords** Hybrid organization; Community-based corporation; integration of policy-making and business impacts

## **Introduction**

Hybrid organisations that bridge the public and private spheres are becoming more common in European countries (Johanson and Vakkuri 2018). Issues that have been discussed since the convening of the 2018 IRSPM ‘Governing Hybrid Organisations’ panel include characteristics and possible functions of hybrids in the provision of various services by universities, medical institutions, social enterprises, and state-owned enterprises. In Japan, community-based corporations (Katoh 2018) are hybrid models with characteristics of both a non-profit organisation (NPO) and a for-profit company.

The 2019 IRSPM Governing Hybrid Organisations panel facilitated meaningful research discussions in the public management community concerning, for example, shared ownership by public and private owners in different institutional settings.

In recent years, Japanese municipalities have been exploring approaches for incorporating market development mechanisms into regional industrial development policymaking. A renewable energy business by the Green Fund Group—a model of the Japanese hybrid organisational structure, a community-based corporation (CBC)—takes the approach of incorporating the development of markets that meet local demands into the formulation of regional industrial development policies.

Hybrid organisations, CBCs, are equipped to perform both non-profit and commercial business. Therefore, at each phase of regional revitalisation, they can supply appropriate NPO advocacies or effective energy business projects, or both. Because of this feature, CBCs can manage projects that simultaneously implement policymaking and develop regional markets and integrate their two spheres to ensure impact over the long term.

Municipalities can incorporate efforts to develop regional energy markets into policymaking by partnering with CBCs. Moreover, CBCs contribute to long-term community formation by incorporating the needs of regional people into formulated policies through advocacy and the realisation of action plans that are output by energy companies.

The next section of this paper describes the background of this research, the research question, and the research approach. A case study of the Green Fund Group is described in the next section, which is followed by clarification regarding the results of ‘CBCs’ integration of regional industrial policymaking and business impacts’. This regional industry creation model is based on the approach of CBCs to incorporate the opening of regional markets into new industrial promotion policies. The last section of this paper includes a discussion of remaining issues.

## **Background**

### ***Background of research***

According to a census published in 2015, the population of Hokkaido was 5,383,579 (down 2.2% from 2010). The downward trend has continued. Of 179 municipalities in Hokkaido, the populations in 171 municipalities decreased (by more than 10% in 46 municipalities) and increased in eight municipalities. The downward trend in natural dynamics since the 2005 survey, has intensified with the declining birth rate and outflow of young people. The striking population decline has two characteristics (Statistics Bureau, MIC 2017). The first is that the population is decreasing in the core cities of Hakodate, Otaru, Asahikawa, Kushiro, as well as in other municipalities in rural areas such as Yubari, Utashinai, and Otoineppu<sup>1</sup>. The second characteristic is that the number of households has increased (2,440,502 households). The number of members per household is now 2.21 (below the previous minimum), and the number of single-person households has increasing significantly. According to the 2015 Ministry of Agriculture and Fisheries census, the working population of agriculture was 96,557 (down 13.3% from the previous survey), with an average age of 57.2 years; 36% were 65 years or older (MAFF 2015).

As described above, the population decline in core cities and rural areas in Hokkaido not only weakens the primary industrial structure but also reduces the size of social services—especially those related to the construction industry, which supports regional infrastructure—because of a decrease in the current budget. To prevent rural resources from being exploited by business clusters in big cities, regional businesses must be responsible for rural economic activities (Koiso 2014), create leading industries, and complement existing industrial structures.

Inevitably, we need to identify approaches that require collaboration across the public and private sectors. The aim of NPO activities is to fulfil its social mission in creating new industries in areas where implementing market mechanisms is challenging. However, NPOs are not only vulnerable to governance, funding, and business sustainability, but they also cannot form capital alliances with private companies to operate on a wide scale. Further, it is not easy for the local government to understand the mission of an NPO. For-profit companies, on the other hand, do not always promise to contribute to the community and are not well-suited for supporting community

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<sup>1</sup> Declining populations in core cities will lead to a decrease in tax revenues. They would broadly disrupt the infrastructure of residents' services, such as education, medical care, and public transportation, involving surrounding municipalities.

decision-making, such as advocacy. Clearly, it takes a long time for community residents and local business partners to change their habitual behaviors.

To create industries in core rural municipalities in Japan, we must identify approaches to resolve these issues. One solution is to spread the NPO mission of creating new industries to associated NPOs, private partner corporations, and municipalities forming a mechanism by which practitioners in each sector can take concrete actions in each community to fulfil the mission.

### *Assignment of issues and research approach*

Regional management of CBCs, which bridges the gap between public and private spheres, is one approach to solve the aforementioned issues. Since CBCs include both NPOs and corporations, they can be involved in the planning of government policies and measures; further, they can execute community-based, for-profit businesses. The Green Fund Group, which embodies a CBC, is a unit composed of the following NPOs: Hokkaido Green Fund, Community Wind Power Co., Ltd., and Japan Green Fund Co., Ltd. (Katoh 2018). The Hokkaido Green Fund (HGF) carries out advocacy and public awareness projects, and Community Wind Power Co., Ltd. and Japan Green Fund Co., Ltd. collaborate with regional NPOs and corporations to implement energy projects. This research focuses on how the Green Fund Group (GFG) engages in advocacy while developing municipalities' energy policies and how the impacts of GFG's energy projects relate to advocacy activities.

First, we reviewed the ordinances, enforcement rules, and promotions pertaining to renewable energy policies of the three cities and one prefecture surveyed. Second, based on HGF's annual report (2000–2018), we examined the relationship between the implementation of HGF's support activities and performance of the energy business. Municipalities surveyed included the cities of Sapporo and Ishikari in Hokkaido Prefecture, and the prefecture itself —where the HGF engaged in advocacy activities—, and Iida city, which has developed since the GFG model was installed.

There are two research questions. First, 'What model explains the CBC's function of integrating policy and business?' Second, 'What are the characteristics and possibilities of industrial creation by CBCs?' This model would clarify the approaches to incorporating market development aimed at introducing industrial policymaking in each community.

## Case studies

### *Policy advocacy of Green Fund Group (GFG)*

The HGF is an NPO established in Sapporo in 1999 with the social mission of realising a renewable energy society with citizens windmill business. This mission has been taken up by Community Wind Power Co., Ltd. (CWP) and Japan Green Fund Co., Ltd. (JGF), among affiliated companies and NPOs involved in the energy business that are operating in various places.

The mission, which incorporates the wishes of citizens at the time of the HGF's establishment, has been upheld by practitioners and partnering organisations through collaborative energy projects.

In this study, we examined the process of transmitting missions to people and organisations and then—to a broader and more complex area, the community—the perspective of socialisation related to energy undertakings conducted by local governments. The community's energy vision, policies, and measures define the future of energy in the community. If the NPO's mission were incorporated into the energy vision and policies, it would be included in the future vision of the local community. Furthermore, the roadmap would be relevant for businesses and citizens' activities in local corporations.

First, we thoroughly examined the energy-related laws and regulations of the municipalities in which HGF participated (i.e. Sapporo, Ishikari, and Hokkaido). We also verified the effects of HGF's advocacy for the energy vision and the process of formulating policies and measures. Second, we clarified the energy-related laws and regulations in Iida city's energy policy, which exemplify HGF's energy business model that is being propagated and developed outside of Hokkaido. Third, according to the case of the GFG, we have explained the features of advocacy activities led by CBCs.

#### *1. Sapporo Energy Policy and HGF Advocacy Activities*

##### *Sapporo's energy vision and policy system*

Sapporo has positioned the energy industry as one of the sectors driving industry creation, and in 2014 formulated the Sapporo City Energy Vision (Sapporo 2015). This is consistent with the existing Sapporo City Self-Government Basic Ordinance, City planning Strategic Vision (Vision Edition and Strategy Edition), Basic Environmental Ordinance, and Global Warming Countermeasures Promotion Plan. This legal system includes measures integrating the transport sector.

After reviewing the energy policy specified by the strategic vision, what are the features of the energy vision? The legal premise is a strategic vision formulated based on the results of the

implementation of measures related to global warming countermeasures that the Sapporo government has been working on since 2011.

The Strategic Vision states three basic slogans of “Basic Objectives of City Development (Chapter 4: Section 5 / Environment)”:

- a city that coexists with abundant nature (Section 15)
- a city that uses resources and energy effectively (Section 16)
- a city where citizens learn about the environment and act (Section 17).

In the Strategic Vision (Chapter 5, Sec. 2-3), the attitude to promote it is to use and co-create limited resources (Section 4) effectively (Chapter 5, Section 3).

The Strategic Vision specifies the following points:

- Low-carbon society and energy transition (Chapter 1, Section 3)
- Creation of low-carbon cities (Section 7)
- Next-generation energy creation strategy (Section 8)
- Urban Landscape of Realizing Strategy (Chapter 2), consists of three strategic themes - Living in the Community, Industry and Vitality, Low carbon and Energy Conversion.

[Insert Figure 1 about here]

Sapporo's Energy Vision was formulated in October 2014 based on the aforementioned Strategic Vision. It has three features. The first feature is that citizens participate in the development process. The second feature is the perspective of denuclearization. Third feature is that the city's energy vision is generally consistent with national and prefectural governments' policy. In the development process, citizens' opinions were aggregated through five routes. (i) Sapporo City Council resolution; (ii) Public awareness survey on energy; (iii) Opinions of workshop participants; (iv) Discussions on environmental councils by experts; (v) Reports from experts.

On the issue of nuclear energy, citizens demanded that Sapporo City take a different stance to national government policy. The Sapporo City council has twice passed unanimously a statement calling for a society that does not depend on nuclear power. A public opinion survey on energy showed that about 80% of citizens hoped for a reduction, or abolition of nuclear power in the future.

Mayor Fumio Ueda, who promised to make a city by citizens' self-government, accepted two city council resolutions and a public awareness survey and formulated a strategic vision. He also

reflected on: (1) the report of the Council, (2) the suggestions of researchers and NPOs, and “public opinion seeking a low-carbon energy society” after the Fukushima Daiichi Nuclear Power Plant accident following the Great East Japan Earthquake. Sapporo City published the Energy Vision Draft on the website of the Sapporo City Environment Bureau for one month from June 2014. It held workshops with NPOs and citizens to listen to any public comments<sup>2</sup>. Sapporo reflected all these opinions in the final edition of Energy Vision<sup>3</sup>.

The basic philosophy of the Energy Vision is a sustainable society that does not depend on nuclear power, in line with the Sapporo City Planning Strategic Vision, which is the highest-level plan. Therefore, Sapporo City declared a policy to promote the effective use of energy and to promote energy conversion by using renewable energy. Citizens, businesses, and Sapporo City independently play their respective roles and present specific means for realizing them while making use of communities such as neighborhood associations and district units (Chapter 5). The necessary administrative costs are specified in the medium-term plan. Global warming countermeasures related to the transportation and utilisation sector were covered in the Global Warming Countermeasures Promotion Plan, and the business system was integrated with the Energy Vision. The plan for Sapporo City is as follows.

Leveraging the Leading Project (Chapter 6: Sapporo Smart Factory Promotion Project), implement measures to save energy by businesses, evaluate and improve them, and disseminate the results. In order for citizens and businesses to be involved in specific activities of the energy vision, the city aimed in establishing actions at each stage of energy-saving activities i.e., "creating opportunities", "notice", and "support for behavior" (Chapter 6).

From the process of formulating the Sapporo City Energy Vision, the following became clear. First, Sapporo's energy vision is formulated with systematic rationality of citizens' autonomy, environmental policies, energy policies, and transport policies, while conforming to the will of citizens. Second, citizens were able to participate in the formulation of an energy vision using five channels. There are measures to ensure that these citizens continue to participate in the energy project

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<sup>2</sup> As for public comments, 234 opinions were received from 58 individuals and one organization, and 432 comments were received from 276 kids. While many citizens supported the draft, others said the policy to eliminate nuclear energy was not feasible and relevant. The Environment Section responds to all comments on the Web. It explained to the citizens that they aim to create a city for the future of the next century, which the Strategic Vision describes. It was also expanding and encouraged them to understand. After an interactive exchange of communication, it revised the draft by 11 items. It stated that opinions that are not included at that time would be incorporated into other policies and measures.

<sup>3</sup> Sapporo City has formulated an energy vision, actively discussing with the council while listening to the citizens' opinions and consulting with power companies.

implementation process. Third, Sapporo is trying to ensure policy consistency with national and prefectural governments<sup>4</sup>.

### *HGF Advocacy Activities in Sapporo*

HGF had been involved in the development of the city's energy vision since 2000, when Sakae Sugiyama, the then-president, received an offer from Sapporo City and became a member of the New Energy Vision Formulation Committee. Meanwhile, at the same time, HGF took on the secretariat of the Citizens' Executive Committee, which created the 21st Century Hokkaido's Energy Policy in 2001, and the secretariat of the Regional Council on Climate Change in 2002.

The former is an organization of a network of local governments in Hokkaido that aimed to enact the Renewable Energy Promotion Act. The latter is an organization that has been set up by the Ministry of the Environment to implement measures against global warming in local governments. Through the administration of the secretariat of these two organizations, HGF played a role as a platform to aggregate the wishes of the local governments and citizens' wishes.

### *2. Ishikari City Energy Policy and HGF Advocacy Activities*

In this section, we will take up the Ishikari City Energy Vision, review the HGF's advocacy activities in the city, and examine the relationship with the results of the Green Fund Group's wind power generation projects.

#### *Ishikari City's energy vision and energy policy system*

Ishikari City's energy-related legal systems are, in order from the highest level: Master Plan, Environmental Basic Plan, Global Warming Countermeasures Promotion Plan, Energy Saving Vision, Regional New Energy Vision (Figure 2).

[Insert Figure 2 about here]

Energy policies related to Basic Environmental Plan included execution plan for office work and business, Green Purchasing Promotion Policy, the basic plan for water and green, and the plan

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<sup>4</sup> Sapporo City is promoting renewable energy projects that are consistent with the national and Hokkaido legal systems and policies. It has a system to cooperate with the government and Hokkaido in information exchange and policy measures, based on Hokkaido's basic direction toward expanding the introduction of new energy.

for extending the life of park facilities. A significant feature of Ishikari's energy policy is that these policies, plans, and measures are systematized and linked as detailed below. The Global Warming Countermeasure Promotion Plan is both a regional development plan and a city management execution plan. Ishikari City has set a long term goal to reduce greenhouse gas emissions by 10% in 2020 from the 2001 level.

In order to achieve the target, it is necessary to develop new energy sources such as wind, solar and biomass, while in parallel, promoting the energy conservation efforts of Ishikari citizens. Taking advantage of the climatic characteristics of the region, the government has begun considering the development and introduction of a regional energy business that does not emit greenhouse gases. Since then, Ishikari has obtained environmental ISO certification, implemented school environment ISO, and implemented measures such as dissemination and enlightenment of citizens' resource-saving and energy-saving activities. It has been encouraging businesses to start working with cities and citizens. Looking at the relationship between energy policy and education plan, the energy concept specified in the education plan and the energy vision has much in common. The future visions of both policies are consistent.

The following is one theory in the education plan.

The progress of global warming caused by increased emissions of greenhouse gases, associated with the use of fossil fuels, threatens the basis of human and biological survival. It is the most crucial issue that needs to be addressed in cooperation with the entire world, transcending regions and countries. Implementing measures against global warming, it is necessary to use resources efficiently in accordance with daily life and production activities, save energy, increase productivity, promote the use of renewable energy, and reduce greenhouse gas emissions (Ishikari City 2010 p14).

The new energy policy is included in the Basic Policy Environment in the Five-Term Master Plan formulated in 2015. The future vision to be realised by this plan is as follows: “We strive to preserve the magnificent natural environment, green landscape, and living environment, and strive to secure urban spaces where all citizens, from children to the elderly, can enjoy relaxation and peace”. At the same time, “We prevent pollution and maintain a healthy and safe civil life (direction).”

An essential industrial policy to realise this vision is the renewable energy business, which will increase the area value of Ishikari Bay New Port. As a result of the new energy potential survey, Ishikari City has found that the new port of Ishikari Bay is suitable for wind power generation as

strong winds blow throughout the year. It is an effective measure to reduce gas (large-scale wind power generation system introducing project). The roles of Ishikari City, citizens, and businesses specified for promoting new energy and energy conservation projects are as follows.

First, the role of the city is to actively work on the following administrative support for citizens and businesses (Article 7.2) - Collection and provision of new energy-related information, enlightenment activities, introduction of new energy facilities of photovoltaic power generation systems, clean energy vehicles, ordinary households and business establishments, and support of a collection system for the utilization of recyclable resources such as waste cooking oil.

Second, the citizens' role is to actively cooperate with Ishikari City's measures and promote the introduction of new energy facilities (Article 7.3). According to current and future estimates of energy demand and carbon dioxide emissions in Ishikari City, households and cars account for a large proportion. The introduction of new energy, such as the recovery of recyclable resources, effectively reduces energy demand and reduces carbon dioxide emissions.

Third, the role of business is to actively reduce energy consumption associated with its activities and introduce new energy. They work with the city and citizens to raise awareness of environmental conservation and promote the introduction of new energy facilities and equipment, such as solar power generation systems and clean energy vehicles (Article 7.4).

Energy demand in the industry and business accounts for more than 30% of the total energy consumption, almost the same as the high demand household and transport sectors of a city. The Ishikari City Global Warming Countermeasures Promotion Plan aims to promote global warming countermeasures in addition to individual measures implemented by each department in the agency while comprehensively and transversely coordinating with other related plans in the city. The entire agency organized Environmental Coordination Meetings and Global Warming Countermeasures Promotion Meetings to exchange information between departments, coordinate the projects, and promote local-level initiatives.<sup>5</sup>

For the dissemination of new energy systems, the following are issues from citizens' and businesses' understanding and active efforts. For example, examining beach plants' protection, promoting renewable energy, extending the life of park facilities, and promoting the forest plan with Atsuta.

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<sup>5</sup> Ishikari City consistently promotes renewable energy projects with the national and Hokkaido legal systems and policies and Sapporo City.

There are three components of public awareness. The first element is to raise awareness by collecting new energy information and providing it to citizens and businesses. The second element is to hold exhibitions of new energy and energy-saving equipment, symposiums and to implement new energy classes in school education. The third element is the training of new energy practice leaders - the training of citizens and businesses as leaders and serving as a bridge between the government and citizens. HGF implements and supports the above three activities.

#### *HGF Advocacy activities in Ishikari City*

The first meeting between HGF and Ishikari City was to discuss plans to realise a second citizen-led wind power project. Advocacy activities in Ishikari City began in 2009 after Toru Suzuki, CEO, became a member of the Ishikari City Environmental Basic Plan Revision Citizens' Council. A recent collaboration with Ishikari City and HGF is the Ministry of the Environment's region-led renewable energy commercialisation study project (2012-2018). This is a community-based power generation project in Atsuta, Ishikari City, following the Kazeru-chan and Karinpu wind powers (2000kW, two units). Ishikari City has established the Community Development and Environment Fund to utilise part of the power generation business proceeds. CWP and JGF are involved in this power generation.

In addition, HGF participated in the energy conservation and renewable energy promotion awareness project implemented by Ishikari City as an NPO. It regularly conducts education for elementary and junior high school students, windmill tours, and candle night events in cooperation with the NPO in Ishikari (HGF Activity report 2000-2018). As the secretariat of the Global Warming Countermeasures Regional council, it is also responsible for supporting local governments, NPOs and businesses. The Council for Global Warming Countermeasures is also a place where citizens and businesses collaborate to plan and disseminate new energy systems to citizens and the use of new energy and energy-saving products in schools and homes. These initiatives encourage participating municipalities, NPOs and businesses to share their energy vision and participate in Ishikari's environmental conservation activities.

As shown, Green Fund Group has many influences and very active in Ishikari on two fronts: advocacy and awareness-raising projects of HGF, and the power generation work of CWP and JGF. Through these, it participates in both policy development, the community's economic activities, and operates a business to meet the needs of the community.

*Energy business in Ishikari city - from construction of civil wind power plants to construction of wind farms*

Ishikari Bay New Port in Ishikari City, facing the Sea of Japan, 15km north of Sapporo City, is a logistics, industrial and transportation hub in the central Hokkaido area. It has an industrial area with more than 650 companies and high demand for electricity. Wind conditions of more than 6 m/s per year give it an advantage in wind power generation. For a stable power supply, it requires energy resources other than wind, but there are also liquefied natural gas power plants in addition to solar and biomass power plants.

The Green Fund Group established three windmills near the estuary of the Ishikari River in 2005 (Kazeru-chan, Karinpu) and one in 2008 (Kanami-chan) to operate the power generation business. In addition, there is an Atsuta Municipal Wind Power Plant (Aikaze Mirai, Atsufukumaru) in Atsuta, Ishikari City, which was launched in 2014 by Atsuta Municipal Wind Power Co., Ltd<sup>6</sup>. The community farm led by the citizens, which started with the first citizen windmill (Hamakaze-chan) that started operation in 2001, has resulted in establishing the Ishikari Community Wind Farm (Rera Kuru). It was built in 2017 in the above-mentioned industrial area of Ishikari city with seven power generation units and started operation in 2018. From 2005 to 2010, there was no opportunity to expand the business scale due to a deficiency of transmission line capacity. After the East Japan Earthquake, when Hokkaido Electric Power was soliciting for a new wind power project, CWP applied and was selected as competitive in 2012. CWP conducted an environmental impact survey for five years in accordance with the revised Environmental Impact Assessment Act passed in October 2012. The funding came from local bank loans and citizen contributions. The Ishikari Community Wind Farm<sup>7</sup> is a local demanded citizen-led power generation business realised on the track record of the Green Fund Group's citizen-business category. The Green Fund Group has a total of 63,965kw of civil wind power generation from 31 power plants nationwide.

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<sup>6</sup> Atsuta Community Wind Power Co., Ltd. was established by the investment of CWP, Tokyo Metropolitan 4 Seikatsu Clubs and Venti Japan Inc. Public investment is 99 million yen out of a project cost of about 1.5 billion yen, and the number of investors is 118. Installed capacity 2,000kW x 2 units. In 2016, the power generation was 26,758,472kWh, which was sold to Hokkaido Electric Power Co. and Seikatsu Club Energy Co., Ltd.

<sup>7</sup> Ishikari Community Wind Farm is a power generation business of the Winet Ishikari, one of CWP's 30 subsidiary special purpose company business entities. The project cost is about 6 billion yen, of which citizen investment is 99 million yen. The number of investors is 91, the equipment capacity is 3200kw x 7 units, and the total output is 20,000kw. They sell all power to Hokkaido Electric Power. That is the most prominent citizen wind power project in Japan. The annual power generation is about 50 million kWh, which is equivalent to 15,000 households.

### *3. Hokkaido Energy Policy and HGF Advocacy Activities*

In this section, we look at the HGF advocacy activities in Hokkaido prefecture, which is a larger administrative unit than Sapporo and Ishikari.

#### *Energy vision and policy system in Hokkaido*

The system of Hokkaido's energy policy is as follows (Figure 3). In 2001, the Hokkaido Assembly enacted the Hokkaido Energy Conservation, and New Energy Promotion Ordinance and the Enforcement Regulations to promote energy conservation and promote the development and introduction of new energy. The essential four items of the Hokkaido Energy Conservation and New Energy Promotion Action Plan are (1) expansion of local production and consumption of energy, (2) accumulation of energy-related demonstration and related projects, production, and development bases, and (3) maximizing the potential and efficient use of energy. Consistent with this concept, it formulated a policy to deploy energy-saving and new energy-related actions, which are key initiatives and measures for each fiscal year. Furthermore, in 2014, the Basic Direction for Expanding the Introduction of New Energy was formulated.

[Insert Figure 3 about here]

#### *Consistency of national and local government energy policies*

Hokkaido recommended the national government for power system reform through the Renewable Energy Council, including 36 prefectures and the National Governors' Association.

Proposals include items such as (1) adjustment of location, (2) development of supply and demand adjustment technology, (3) development of transmission infrastructure. Hokkaido called on the National Government to draft national-level policies consistent with Hokkaido's vision of "energy conservation and promotion of new energy<sup>8</sup>."

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<sup>8</sup> As the local governments' energy policies are in line with the national government's legal framework (Law Concerning the Rational Use of Energy), the formulation of new regulations needs to be consistent with it. For this reason, Hokkaido has requested the national government to take the necessary measures to support the efforts of residents and businesses. Besides, all measures are formulated and implemented in line with the approach set out in the Basic Plan, and the Hokkaido Council for the Promotion of Energy Conservation and New Energy Policies is used to promote and manage measures related to the promotion of energy conservation and the development and introduction of new energy throughout the entire government (Hokkaido 2016a).

### *HGF advocacy activities in Hokkaido*

The start of HGF's advocacy activities in Hokkaido's energy policy dates back to 1999, when Hokkaido's Energy Conservation and New Energy policy began. Sakae Sugiyama, a former CEO of HGF, was a member of the Hokkaido Energy Committee established by the Hokkaido government. Energy Committee Report (1999) shows how HGF began participating in advocacy activities in Hokkaido prefecture and local municipality governments.

The Hokkaido Energy Committee was set up as a private advisory board to the Governor, chaired by Yoshihiro Kobayashi, and its 19 members came from major sectors and included experts on energy issues, economic organizations and civil society. According to this report, the Committee's purpose is to conduct a survey and study the supply and demand of energy, development of electric power, which supports local people's lives, industrial activities, with a perspective of the 21st Century. At the beginning of the report, it stated:

*The Committee is comprised of energy and economic experts, as well as representatives of organizations conducting activities on energy issues. In particular, regarding nuclear power, members from different positions are included. With this membership, the committee was organized to make important decisions and, after two and a half years of debate, worked to gain a common understanding. This process was significant.*

The structure of this document is as follows.

1. The situation surrounding energy
2. National energy and electricity supply and demand
3. Energy supply and demand in Hokkaido
4. Conclusions- Recommendations for promoting the introduction of new energy and energy saving

Along with HGF's Sakae Sugiyama, Toru Suzuki also participated in this Committee. The origin of the HGF project's policy advocacy program emanated from the discussions of this Committee. After the Committee completed its work, HGF was responsible for organizing the secretariat of the energy sector, which was established in Hokkaido, Sapporo and Ishikari, in order to formulate energy policies. This report describes the recognition of new energy and locally-generated energy as follows:

*It is important to introduce new and locally- generated energy, reduce dependence on fossil fuels, and increase energy self-sufficiency in order to achieve sustainable and efficient energy use in harmony with the natural environment of Hokkaido. Energy such as sunlight and wind can be used repeatedly, and in small-scale and decentralised areas of the region. In addition, it is characterized by less damage to the environment than fossil fuels. Hokkaido has abundant new and local energies, including renewable energies and recyclable energies that utilise waste. Hokkaido has plans for wind power generation with a rated output of over 500,000 kW.*

*Due to institutional restrictions - the revision of the Electricity Business Law - there has been no case for heating that uses waste heat from power plants in Japan. In Europe, power plants are often installed in and around cities to supply such heating requirements.*

That is, the Committee had stated two conflicting opinions. It recognized the significance and potential of new and local energies to promote harmony with the environment. However, the scale is still small, and the technological level is not mature, so it is assumed to be used as auxiliary energy source. Sugiyama's ideas are reflected in the description of new energy and local energy's significance and potential. Thoughts of the business community, such as the Federation of Economic Federations, are reflected in the statement of the limits of new and locally generated energy in Japan. Next, we focus on the description of the report's conclusion - the change in the infrastructure and structure of energy supply and demand.

*Energy is a fundamental resource that is indispensable not only for the peoples' lives but also for industrial economic activities. However, global dependence on fossil energy has been causing a crisis of global environmental destruction. In particular, Hokkaido has higher energy consumption per capita than other regions due to winter seasons and cold regional characteristics. It is necessary to provide policy guidance on both energy supply and demand with local people's cooperation. There is a need to transform into a new socio-economic system with an energy supply and demand structure that can reduce the burden to the environment, stabilise the lives of local people, and maintain or grow the vitality of industrial activities.*

The report recognised the necessity for industry and people's lifestyles to shift to a sustainable socio-economic system of energy supply and demand, reduce the environmental burden, and achieve it through two opportunities - citizen actions and policy guidance. Sugiyama's opinion was

incorporated into the proposal. At this time, Suzuki grasped how to incorporate the energy vision, designed by HGF, into the energy policies of Hokkaido and municipalities.

The committee's review included a topic on the governor's decision on whether to add a Tomari Nuclear Power's new plant in Hokkaido. While Sugiyama opposed the expansion, members of the business community agreed to the expansion, which led to a fierce debate, but both sides began to agree on what could be shared. Suzuki argued that the proposal should include the direction and concrete measures for the future society and industry, that are not dependent on existing fossil fuels and nuclear power. Sugiyama submitted the following statement to the Committee:

*The 21st is the century of the environment*

*In designing a sustainable energy policy for Hokkaido, it is widely accepted that it is necessary to shift from a socio-economic system that produces, consumes and discards large amounts of conventional energy, to an energy-saving and environmentally friendly one.*

*Hokkaido has a unique political and social environment in Japan, in which the Hokkaido government and the electric power companies are responsible for the same area. Therefore, Hokkaido is in a situation where it can implement its energy policy that makes use of the local characteristics, and shift from the national government's conventional energy policies that ignore regional characteristics such as climate and industrial structure.*

*In Hokkaido, there is already a plan to install 550,000 kW of wind power, which is close to 10% of the total power supply capacity of Hokkaido Electric Power. Abundant forests and biomass energy also have lasting energy potential. Renewable energy countermeasures against carbon dioxide emissions by reducing petroleum energy for heating in Hokkaido will contribute highly to solving the issues. Regeneration of primary industry will become the key to regional revitalization. The introduction of cogeneration is expected to have a ripple effect on the local economy as a new environmental public service. From the perspective of creating new industries, it is crucial to aim for a transition to an environment-friendly energy supply structure through the bold introduction of new energy.*

*On the other hand, the issue of nuclear power has not reached a social agreement. We believe there is a high risk of potential accidents. Further, there is no final disposal method for radioactive waste. Nuclear energy has no economic advantage, and there is an investment risk as electricity liberalisation progresses. Above all else, it is alienating the pursuit of alternative energy and energy-*

*saving possibilities. In light of these points, nuclear power must be considered an unsustainable energy.*

*Therefore, a gradual reduction must be promoted for the future. With the expansion of Tomari Nuclear Power's new plant, citizens will face severe risks of increasing the number of plants without regard to such uncertainty. In such a situation, we should choose the least risk. The expansion of Tomari Nuclear Power's new plant is a disadvantageous plan in terms of accident and investment risk. We should choose a low risk, moratorium option - a few years of construction deferment- based on social judgment. We should decide in 2002 or 2003, monitoring changes in factors. In the meantime, we will scrutinise the potential for adoption, including renewable energy and small natural gas. At that time, we should clarify the roles of local governments, electric utilities, private companies, and local people, and implement the New Energy and Energy Conservation Ordinance that includes specific measures. We will hold a referendum on the final decision of the governor regarding the expansion of Tomari Nuclear Power's new plant, and state that the intentions of the public are fully respected.*

Sugiyama has requested five items: (1) To define nuclear power as unsustainable energy; (2) Moratorium on the decision to expand the Tomari Nuclear Power's new plant; (3) Formulate policies to minimize uncertainty; (4) Enact energy conservation and new energy regulations; and (5) Public referendum and involvement of citizens in the policy- making process. The Committee's final report stated that Sugiyama asserted that "nuclear power is unsustainable energy." At present, it shows that even if new and local energies are not primary energies, they may become principal energies in the future. This sentence will determine the character of Hokkaido's renewable energy policy after that.

The Committee has no binding power on public decision-making procedures, such as parliamentary resolutions. However, Hokkaido government implemented energy policies and measures based on the contents of this report. Almost all the items required by Sugiyama were reflected in the report, as follows: Concerning (1) the concept of nuclear power as unsustainable energy specified in the Hokkaido Energy Saving and New Energy Promotion Ordinance. Concerning (2) after the grace period, the governor decided to add a Tomari Nuclear Power's new plant. Concerning (3) The Hokkaido Environment and Energy Council Global Warming Countermeasures Committee were established, and measures were drafted. Concerning (4) Energy conservation and new energy regulations were established in 2013. Finally Concerning (5) although a referendum has

not been held, the Citizens' Participation in the Policy-Forming Process realised under Sapporo Ueda City's government after Fumio Ueda, a lawyer at the time, became Mayor of Sapporo.

After that, Hokkaido's Energy Vision Basic Direction for Expanding the Introduction of New Energy in Hokkaido, Hokkaido Energy Conservation and New Energy Promotion Ordinance (Hokkaido Ordinance No. 108, enforced on April 1, 2014), Action Plan based on this Ordinance was established. The statement in the report, "Nuclear power is unsustainable energy," was also stipulated in the preamble of the Ordinance, indicating the direction in which new energy will be produced in the future. Suzuki is a member of the Hokkaido Environment and Energy Council Global Warming Countermeasures Committee. In addition, he advises the Ministry of Economy, Trade and Industry, Hokkaido Bureau of Economy, Trade and Industry, Hokkaido Regional Environment Office, and the Regional Energy and Climate Change Promotion Council (2007-2018), Hokkaido Energy Conservation and New Energy Promotion Ordinance Review Discussion Meeting. He is continuing to make recommendations.

#### *4. Iida City's Energy Policy: Propagation of Green Fund Group Model to Iida City*

Iida is a city in Nagano prefecture on the Japanese mainland. GFG's power generation business practices are reflected in Iida's energy policy. Iida's NPOs and business units learned about GFG's mission and business schemes, and they developed a power generation business in Iida City with people from the local government in Iida.

This section provides an overview of Iida's energy vision and policies and discusses differences from the cases of Hokkaido.

#### *Iida's energy vision and policies and measures*

The highest-level legislation of Iida City, which has a slogan of an environmentally cultured city, is the 4th Iida City Basic Concept and Plan formulated in 1996. "Sustainable city creation" is one of the essential measures. The Environmental Basic Plan (third edition, 2014) has an underlying philosophy of energy policy: the concept of a culturally independent economy. It has pursued renewable energy and energy conservation projects in accordance with the Energy Vision formulated in 1996. It enacted the New Energy and Energy Conservation Regional Plan in 2004, and had promoted enlightenment and promotion (Fig.4).

[Insert Figure 4 about here]

It established a regional council consisting of citizens, NPOs, local organizations, consumer groups, business establishments, academic researchers, and government officials to manage the progress. Iida's energy business had progressed, that the goal is to reduce greenhouse gas emissions from the household sector by 2030 by 40-50% compared to 2005, since it was selected as an environmental model city by the Cabinet Office in 2009. In 2013, Iida City enacted the "Regulation on Sustainable Community Development through the Introduction of Renewable Energy" (Iida 2013), which grants citizens regional environmental rights<sup>9</sup>.

The regional environmental rights are stipulated in Article 3 as follows:

The regional environmental rights are that the right to use local resources as renewable energy and live in harmony with the natural environment and local people's lives. Because regional environmental right is not an exclusive property right, it is impossible to suspend the exercise of others' property rights or claim damages based on that right. The purpose of this Ordinance is to "Ensure the citizens of Iida their right to use the natural resources existing in the area of Iida City for renewable energy projects, in harmony with the environment and promote sustainable community development, by establishing the necessary city policies (Article 1)." Renewable energy resources are defined as natural resources used to obtain renewable energy and located in the area of Article 1-4). Iida City supports citizens based on the regional environmental rights, to start the power generation and sales of the energy business. Moreover, it also helps corporations to start the energy business in cooperation with citizens. Renewable Energy Introduction Support Examination Committee (15 committee members), in response to the mayor's consultation, was established in 2013 as an affiliated organization that provides appropriate support based on expertise<sup>10</sup>. It examines the proposal's content and decides on the business entity to support and the suitability of the fund loan. For example, Iida established a fund, and by using it as a source of funding and lending to the

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<sup>9</sup> The three conditions for exercising regional environmental rights are as follows

(1) Harmony with the natural environment, compatibility with other rights, and transmission to future generations, (2) Contribute to the public welfare, (3) Exercised by local citizens' groups where renewable energy resources exist, through the decision-making. Regional environmental rights mean that all citizens can benefit from their region's natural resources while avoiding energy developments that damage the regional environment and livelihoods. This guides policies to build a sustainable region.

<sup>10</sup> The mayor certifies appropriate public-private partnership projects according to the criteria set out in the Ordinance. Public-private partnership projects are community improvement projects carried out by public authorities in the city through renewable energy projects. Iida City provides the following support to public-private partnership renewable energy projects. (1) Advice on the planning and operation of the feasibility plan, (2) Facilitating loans and investments in projects and providing credit to make it easier to raise initial costs, (3) Granting subsidies and lending funds, (4) Assignment of the right to use city property if the project is to be carried out using city property.

supported entities, to support the initial investment costs of the renewable energy business. These actions solved the shortage of funds from startup to electricity sale, that is faced by small and medium enterprises (SMEs) and citizens' organizations.

A solar power generation project was utilizing the roof of the DAKA Community Disaster Prevention Center, in a project that community-based energy corporations promoted in Iida as a collaborative partner in Iida City. A part of the electricity sales revenue is saved in the DAKA area, and it is used for emergency power supply equipment during disasters and environmental learning programs for residents. The public and private energy companies' power plant installation project (started in 2004) by the city and local energy companies has raised funds using citizen investment from all over the country. Approximately 150 solar power generation systems with 1208 kW were installed on the roofs of facilities and offices in the city. The project spread throughout the city and southern Nagano Prefecture. In the solar power generation business, government grants the public benefit cooperator a non-intended use of public properties for 20 years. These measures ensured the business's stability, the trust of citizen funds and the credibility of lending by financial institutions.

During the 20-year contract period, the rebuilding of facilities includes provisions to continue the contract with the public interest features and strive for understanding between the parties.

The support contents include policy financing, the spread of solar power generation facilities, and business subsidies.

#### *Development of business scheme in Iida*

The local demand-based power generation business in Iida was developed with the support of Iida's energy policy. The citizen fund scheme used to support the start-up of the new regional energy business, described above, was devised based on JGF's citizen investment in GFG's wind power business and applied to the solar power business in Iida (Katoh 2017). After the HGF power generation business model was passed on to Iida, it met Iida's energy vision and policy system for promotion, and was incorporated into the public-private partnership between Iida's local energy corporations, NPOs, and the government, has been utilised. In the case of Iida, the concept of regional environmental rights mentioned above is at the root of many regional energy businesses. It stipulates that the residents are the primary owners of the resources of the local community, and specifies the citizens themselves use energy resources and run autonomous local communities.

We first saw the results of GFG's advocacy activities in local governments in Hokkaido, but unfortunately, it does not include cases where local governments legally recognize local people's ownership of local resources. GFG, on the other hand, has no direct advocacy activities with Iida. Instead, it assisted local corporations and NPOs in Iida, taught them business schemes and citizen-funded systems, and encouraged them. The development of Iida's power generation business is the result of local governments, local corporations, and citizens themselves.

### ***Analysis: Features and possibilities of the Green Fund Group's (GFG's) industrial creation***

In this section, we describe the features and potential of GFG's advocacy, based on the results of the case mentioned previously.

#### ***Feature 1: Theoretical integration function***

Three stages reflect the social mission of the NPO in terms of the energy vision and policies of local governments.

From the examination of the energy vision and policy formulation process of three local governments in Sapporo, Ishikari, and Hokkaido, we focused on two perspectives for the three stages of policy formulation. The first perspective includes the energy vision and policies of local governments, and the second involves the results of HGF's advocacy activities.

The first stage is the phase in which the HGF mission is reflected in the local government's energy vision, policies, and measures through advocacy (This is input). The second stage is the phase in which local governments develop energy policies and measures (This is output). The third stage is the phase in which regional corporations implement energy projects in accordance with the output policies and measures (This is another output).

An examination of the discussions at the Hokkaido Energy Issues Study Group (HES) revealed that most of the recommendations were output as policies and measures in Sapporo and Hokkaido. On the other hand, specific power generation projects of HGF and CWP were also output.

The future energy vision of the municipality formulated after these discussions includes shared goals pertaining to the business outcomes of regional energy corporations (with the consent of the residents in their community) for project development. In addition, stakeholders in each sector would share their energy vision and promote individual activities; further, their business outcomes would be integrated into the middle-term and long-term impacts with the participation of more

stakeholders. One example is GFG's activity in Ishikari: implementation of a community-based local power generation business (with only two wind generators in 2005) and construction of a community wind farm in 2017.

The NPO/HGF, a core organisation consisting of the GFC, has successfully installed its missions in the community's energy vision, policies, and measures through advocacy activities. Further, CWP and JGF have successfully implemented energy business activities with various municipalities, NPOs, and corporations according to the community's energy vision and action plans. Thus, NPOs' missions, which are shared by regional residents are included in the policy agendas of their communities.

There is a flexible mechanism to connect practitioners in the public and private spheres and integrate activities and business impacts. Ishikari's wind power business is an example. As a result, an agile ecosystem—a system in which the implementing entity is on standby until a policy is expressed—has been created. New businesses can start up as soon as the action plan is drawn up. Cooperation that combines policy and business visions opens the door to new markets. Even if the scale is small at first, growing business profits returned to the local community and community businesses indicate progress that will continue for a long time.

The implications of this case study show municipalities could form a regional economic system by cooperating with organisations which have a new advocacy management system (as described previously). Participants could engage in social practices that return business profits to the community; the focus would be civil society. Measures such as clarification of local environmental rights in Iida, ownership, and credit security are also good examples of public management with CBCs.

### *Feature 2: Possibility of the GFG's advocacy activities.*

The GFG has two forms of management: NPOs that are responsible for advocacy activities and enlightenment and corporations that execute energy-related business and support regional power generation corporations. The HGF (representative of the former group of GFG) participated in the development of the local government's energy vision, ordinances, enforcement rules, and promotion plans, reflecting its mission and the will of the citizens in those articles and statements. Promoting enlightenment with both environmental protection and community development NPOs was another objective. The CWP and JGF (representative of the latter group of GFG) have launched regional

renewable energy business projects that are suited to the needs of each region and executed power generation projects in cooperation with regional corporations.

The GFG's functions are twofold because it has a management structure that bridges the public and private spheres. One function is to integrate regional policies and people's decisions legally and theoretically. The other relates to the formation of the regional economic system. The GFG manages HGF's advocacy activities and CWP's energy business capabilities. HGF's advocacy activities are backed by wind condition surveys, specialised research, and research on next-generation renewable energy. CWP's power generation performance also backs them. The GFG (CBC) is suggesting the possibility of emerging practitioner leading models that drive the creation and operation of new industries by bridging the public and private spheres.

### **Solutions to research questions**

#### ***CBC's integrated advocacy and regional business activities***

The purpose of this study was to identify approaches that incorporate business management strategies into policies that local governments require to create or strengthen the regional economy, focusing on the functions of hybrid governance. Based on the analysis of the GFG in the previous section, we derive the CBC model of the mechanism for integrating policy formation and business impact (Figure 5).

[Insert Figure 5 about here]

CBCs have the following two features. First, because they have both non-profit and for-profit functions, they supply appropriate non-profit advocacy activities and for-profit energy business activities in each phase of regional industrial creation. Second, CBCs can manage projects that combine policymaking and market development simultaneously and integrate their results over the long term. Local municipalities can utilise the following model linking policy formation and business impacts to integrate the business management approach into policymaking. The model includes the following: First, three stages integrating social missions with policies and/or measurements. Second, development of an energy market that is driven by local demand. Third, plowing back of energy business profits into the local community that can be turned into regional economic capitals and social value creation. The CBC model of a linkage system between policy formation and business results is a useful tool for regional industrial creation projects. After the GFG relocated its business framework to Iida City, the regional energy corporation, Ohisa Progress Energy Co., Ltd., became the pioneering

core organisation in Iida. It succeeded in customising GFG's renewable energy business frame to the regional condition and institutionalisation.

This practice illustrates the possibility that CBC's business framework can be relocated elsewhere, and residents will not only make it better suited to their regional business but also institutionalise and work with local practitioners. Completing the installation of the regional energy business scheme in the community benefiting from fixed and continuous profits can be given over the medium to long term. The archetype of the relationship between businesses and stakeholders is embedded in the region.

[Insert Figure 6 about here]

Many local communities are working with businesses to create renewable energy for a greener future. This will lead to social change. It can be achieved successfully by mixing, integrating and institutionalising the different elements of public, private and civil society (2021b Jarmo Vakkuri, Jan-Erik Johanson).

### **Remaining issues**

Each municipality has an entirely different system for energy-related laws and regulations. The systems in Sapporo and Ishikari are not the same. The factors that go into the policymaking process vary by municipality and include the endowment of energy resources, mayoral leadership, political techniques, methodologies of government officials, opinions of experts and residents involved in the formulation process, and organisations' activities that start businesses. Therefore, this model is constrained by conditions specific to a region. In particular, in areas where management resources are scarce, and there are no human resources, such as the mayor's initiative, local government executives, or highly mission-conscious CBC presidents, we must consider recruiting new stakeholders and replacing others.

For these practical issues, instead of relying on specific human resources, making it easier for new players as key actors to be on board, leveraging CBC's Advocacy management system's capabilities is a feasible approach. The following research issue will clarify the concept of these mechanisms and the approach for equipping CBCs with the educational function of human resources that are required after establishing the mechanisms.

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(Accessed 10/10, 2020)

Fig.1 Sapporo Energy Policy Regulation system

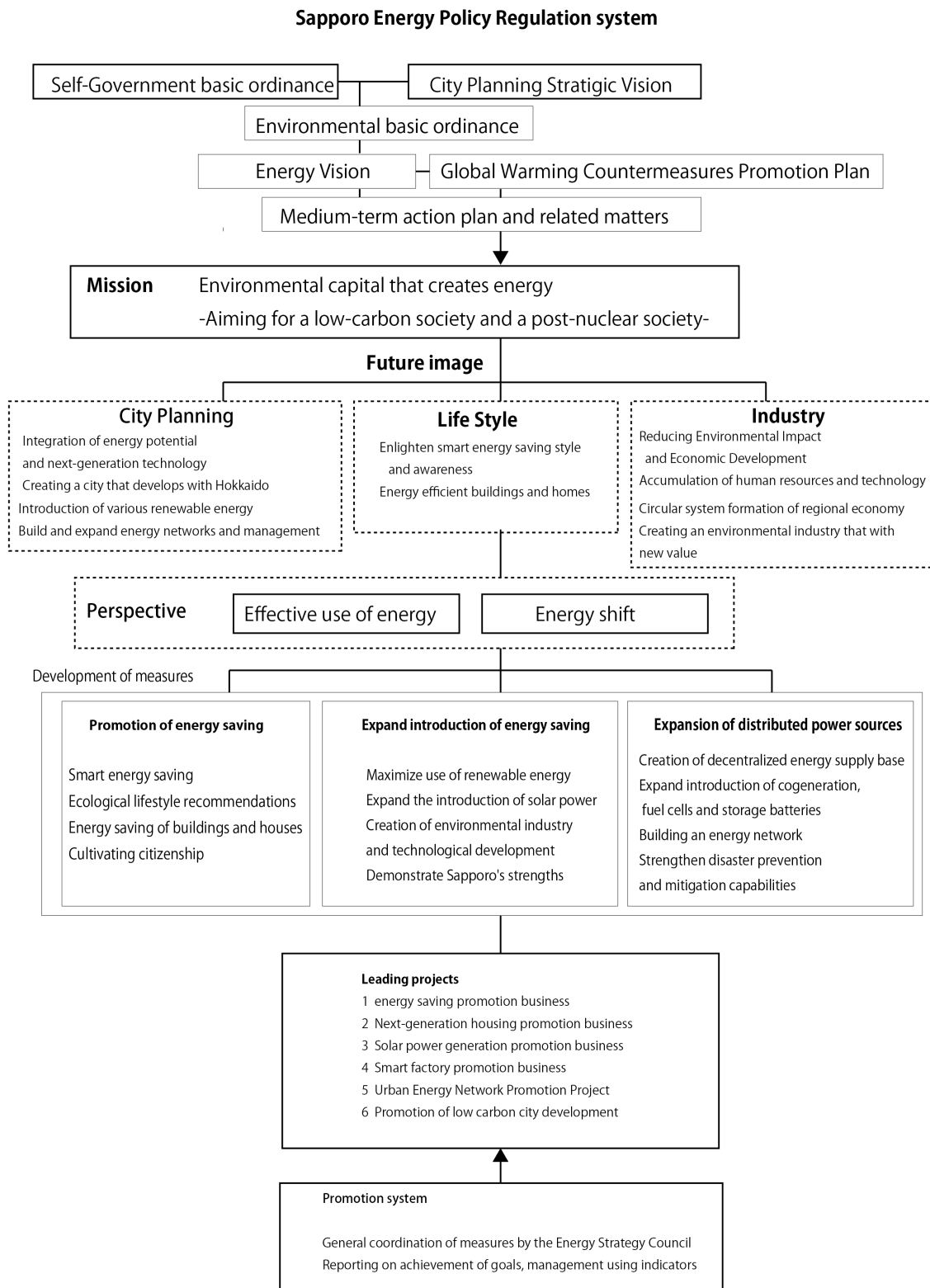


Fig.2 Ishikari Energy Policy Regulation system

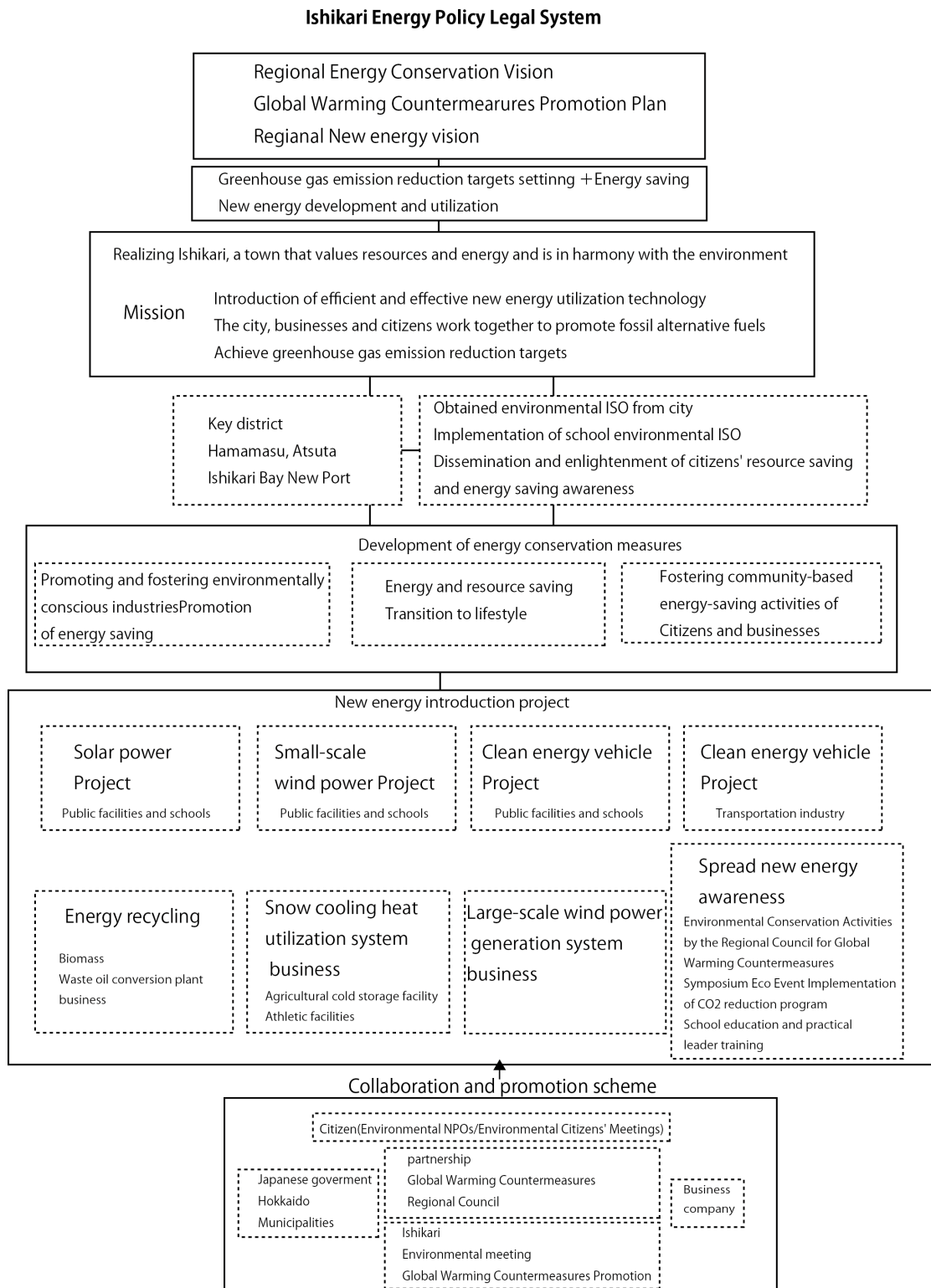


Fig.3 Hokkaido Energy Policy Regulation system

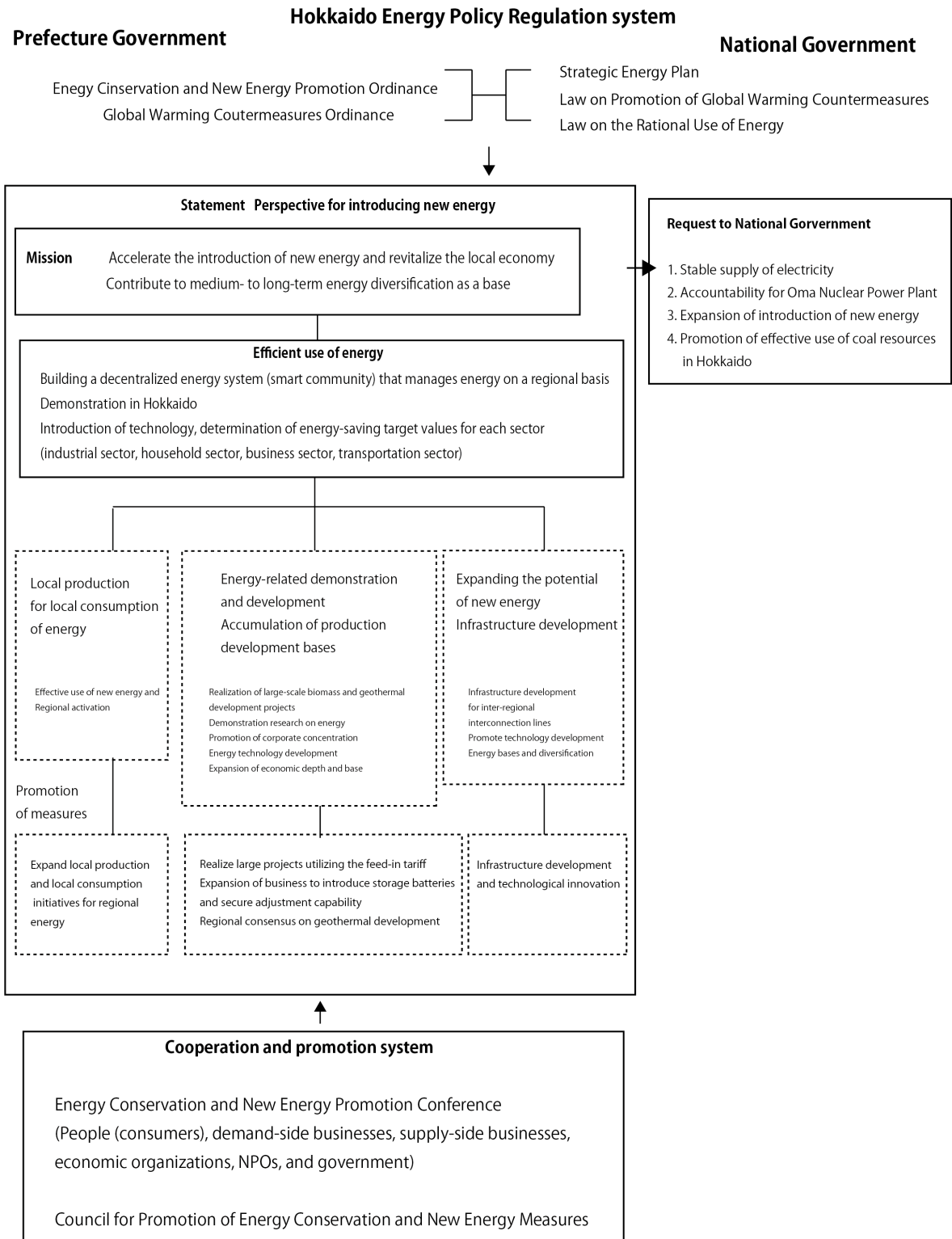


Fig. 4 Iida Energy Policy Regulation system

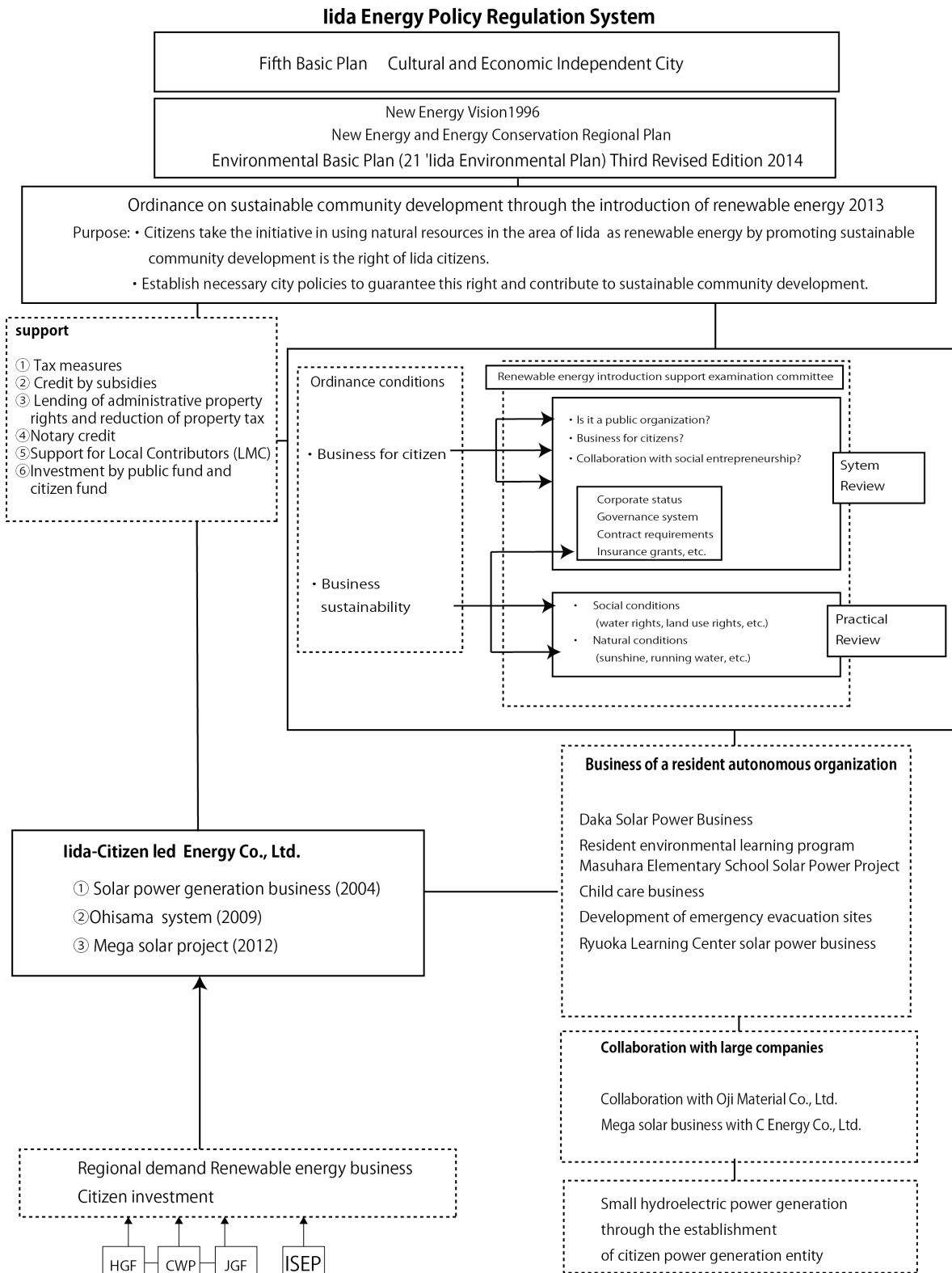


Fig.5 Possible CBC's advocacy activities

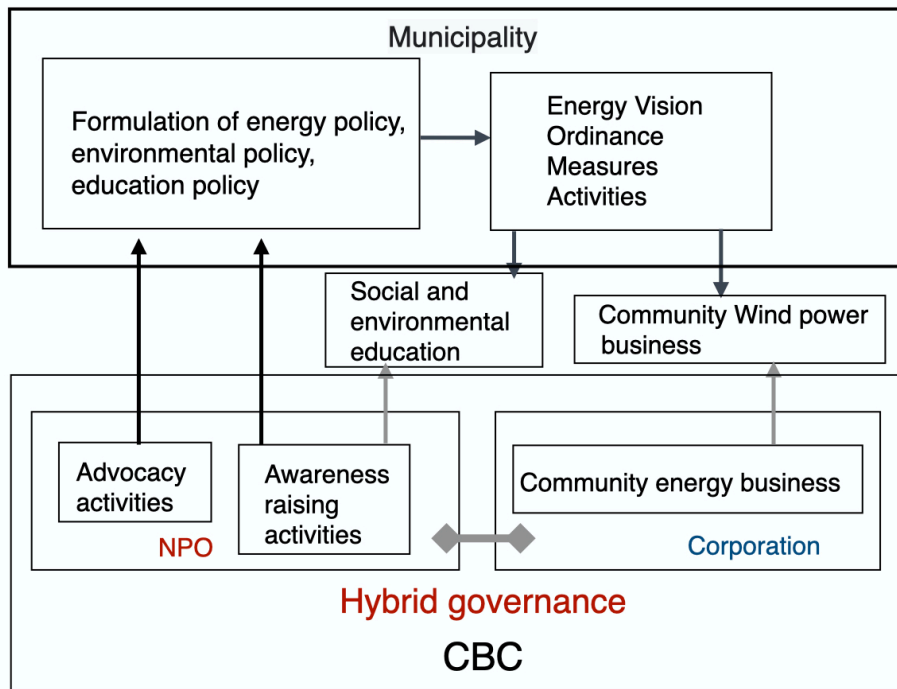


Fig.6 CBCs create economic capital and social value

