Part 2: Procedure for Developing the Biomass Town Plan
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Part 2: Procedure for Developing the Biomass Town Plan

2.1 Overall Process of Developing the Biomass Town Plan

2.1.1 Overall process and definitions

● Overall process
  – A Biomass Town Plan is developed in the following steps:
    • Organising the planning bodies
    • Developing the basic policy
    • Planning biomass utilization projects
    • Formulating the Biomass Town Plan

● What is the “basic policy”?
  – The basic policy defines the essential items of the Biomass Town Plan, such as who (business operators), what (what kind of biomass), how (collection, transportation, conversion, and sales), and to whom (end users). These items should be considered based on the biomass potential in the target area, the amount and methods of biomass utilization, and forecasted needs of the biomass-derived products.

● What are “biomass utilization projects”?
  – Biomass utilization projects are the business plans laying out the details of biomass procurement to utilization of biomass-derived products, based on the basic policy. The support of experts from the academia and others are necessary in developing the basic plans.

● Formulation of the Biomass Town Plan
  – The Biomass Town Plan is to develop a coherent plan describing the overview and schedule of each biomass utilization project based on evaluation of each project’s feasibility and sustainability and consideration their advisability and priorities.
  – The Biomass Town Plan can be formulated, after the basic policies are developed. It is then possible to implement biomass utilization projects based on their priority.
2.2.1 Preparation at the central government
- Set up a central committee comprised of the ministries involved in biomass policies.
- Select a pilot municipality.

2.2.2 Preparation at the pilot municipality
- Set up a local committee, comprised of members from the central and local governments, universities and research institutions, and other stakeholders such as representatives from the local community and local businesses.
- Clarify the current situations and issues related to biomass in the pilot municipality.
- Set a target area.
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2.1 Overall Process of Developing the Biomass Town Plan

2.1.3 Developing the basic policy

2.3.1 Setting the goals of the Biomass Town Plan
Set the goals and impacts of the Plan, based on the current situations and issues in the pilot municipality/target area and the biomass utilization strategies of the central government/the pilot municipality.

2.3.2 Investigating potential operators of the biomass utilization projects
Investigate potential operators of the biomass utilization projects, such as the local government, private businesses, community organizations, farmers' associations, and other parties.

2.3.3 Surveying the major biomass sources and their available amount
Survey the major biomass sources in the target area and survey their available amount.

2.3.4 Investigating applicable conversion technologies
Investigate applicable conversion technologies in order to utilize the major biomass in the target area.

2.3.5 Surveying the existing local examples of biomass utilization
Survey the existing biomass utilization projects in the pilot municipality and surrounding areas in order to consider applicability of the existing projects to the targeted area.

2.3.6 Surveying needs of biomass-derived products and energy
Survey possibility of biomass-derived products and energy use, if they are used as fertilizers and energy substitutes in the target area, the pilot municipality, and the surrounding areas.

2.3.7 Developing the basic policy
Develop the basic policy for each biomass type based on the mentioned investigations and surveying.

2.3.8 Formulating the basic policy
Formulate the basic policy after confirming the relationships between the basic policies developed in previous step.
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2.1 Overall Process of Developing the Biomass Town Plan
2.1.4 Planning biomass utilization projects

2.4.1 Surveying the detailed conditions to implement projects
   Survey source amount and characteristics, sites for conversion facilities construction, the cost to collect and transport the source, and needs and needs variation of end users.

2.4.2 Selecting the optimal process for each policy
   Select the optimal process for each policy based on the above survey.

2.4.3 Planning the basic design for each conversion facility
   - Determine the basic design and specifications of each facility, considering the optimal process for each basic policy.
   - Estimate the initial cost and operating cost based on the basic design.
   - Confirm which licenses and approvals are required to build each facility based on the basic design.

2.4.4 Evaluating income and expenditure
   Evaluate profitability of the projects based on the initial cost and operating cost estimated in the basic design of each facility.

2.4.5 Considering to improve income and expenditure
   Consider to improve income and expenditure and re-evaluate economic feasibility as necessary.

2.4.6 Considering to handle risks
   Analyze risks and consider to handle the risks to ensure business sustainability in advance.
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2.1.5 Formulating the Biomass Town Plan

2.5.1 Considering the advisability of the projects
Considering the advisability and priority of the projects based on evaluation of the feasibility and sustainability of each biomass utilization project.

2.5.2 Obtaining resident consensus
Plan the necessary education and dissemination activities to foster understanding among local residents and other stakeholders.

2.5.3 Making schedule based on design to start facility operation
Make implementing schedule, including sites and licenses acquisition, designing, education and dissemination activities, constructing and test-operating facility.

2.5.4 Formulating the Biomass Town Plan
Formulate overview and schedule of each biomass utilization project into the Biomass Town Plan.
It is needed for the central government to establish a central committee comprised of representatives from the related other ministries and support each Biomass town in cooperation with the other ministries.

It is also needed for the central government to nurture the pilot municipality and spread similar initiatives across other areas, in order to build Biomass Towns through the country.

(1) Organizing the Central Committee

● Necessity of cooperation between the related other ministries
  – Biomass utilization policies are connected to a variety of national policies, such as agricultural, environmental, waste management, sewage treatment, energy, and academic policies. In order to promote biomass policies, cooperation among the ministries holding each jurisdiction to promote these related policies is absolutely necessary.
  – The cooperation among the ministries is also necessary to promote the Biomass Town Concept.

● Role of the Central Committee
  – The Central Committee assists and manages development of the Biomass Town Plan and implementation of biomass utilization projects in the country.
Part 2: Procedure for Developing the Biomass Town Plan
2.2 Organizing the Planning Bodies

2.2.1 Preparation at the central government (2/2)

(2) Selecting the pilot municipality (Spreading the pilot across the country)

- **Purpose of the pilot municipality**
  - It is necessary for the central government to select the pilot municipality, assist formulation of the Biomass Town Plan in the area and spread the pilot across the country according to the scheduled Biomass Town Concept promotion.

- **Target area of the Biomass Town Plan in the pilot municipality**
  - Setting the target area in the pilot municipality as an administrative district or settlement rather than entire the municipality, because the narrow area can be advantageous in promoting Biomass Town Concept.

- **Points to consider selecting the pilot municipality**
  - The following factors should be considered to select the pilot municipality:
    - Municipality which is eager to utilize its biomass.
    - Municipality which already utilizes its biomass and has facilities for composting or methane fermentation.
    - Research institutions and universities studying biomass utilization are located in the municipality and supposed to participate the planning body.
Part 2: Procedure for Developing the Biomass Town Plan

2.2 Organizing the Planning Bodies

2.2.2 Preparation at the pilot municipality (1/4)

- The municipality should play a central role to organize the planning body in the pilot municipality.
- The central government supports the pilot municipality to promote the Biomass Town Concept by participating in the planning body.

(1) Organizing the Local Committee

- Necessity of cooperation among between the related ministries
  - The pilot municipality leads in setting up the Local Committee comprised of representatives from the central and local governments, universities and research institutions, and stakeholders in the region (agriculture, forestry and fisheries industries, Non-Profitable Organizations (NPOs), private businesses, etc.)

- Role of the Local Committee
  - The Local Committee develops and manages the Biomass Town Plan, and manages and supports each biomass utilization project in the pilot municipality.
  - The Local Committee is expected to actively disseminate its activities and experiences to help the central government spread the pilot across the country.
(2) The roles and cooperation of the members in the local committee

- To promote biomass utilization, private businesses should play a central role in the development of biomass utilization projects, along with the central and local governments, and the biomass suppliers and users playing their respective roles.

<table>
<thead>
<tr>
<th>Category of the members</th>
<th>Roles</th>
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</thead>
</table>
| Municipality            | ● Playing a central role to organize the Local Committee and to develop the Biomass Town Plan, by means of its executive measures, financial measures, and human resource support and so on.  
                           ● Playing a role to establish economical Biomass Utilization System including the local waste management, since municipality is responsible for its waste management.  
                           ● Developing the Biomass Town Plan from the perspective of local economic development as a “manager” of local economy. |
| Central government      | ● Supporting the municipality from the perspective of implementation and promotion of national policies, since the Biomass Town Concept are parts of environmental, agricultural, regional promotion, and energy policies at the national level. |
| Universities and research institutions | ● Participation of universities and research institutions which conduct basic research on biomass utilization technologies is recommended to promote the dissemination of their technologies.  
                                       ● Providing technical knowledge in the country for nationwide promotion of the pilot. |
| Rural communities       | ● Cooperation each other in order to collect agricultural residues in order to promote biomass utilization projects. |
| Private businesses      | ● Private businesses are expected to voluntarily participate in the Local Committee to use their technologies, money and labor powers.  
                           ● Applying market principle to promote biomass utilization projects. |
| NPOs                    | ● NPOs and residents are expected to participate in the Local Committee voluntary, which can reduce costs and make it easy to promote biomass utilization projects, since the administrative services are limited. |

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2.2 Organizing the Planning Bodies
2.2.2 Preparation at the pilot municipality (3/4)

(3) Understanding the current situations and issues in the pilot municipality

- Coordinating with the local industries to promote the Biomass Concept or planning vision
  - The Biomass Town Plan should reflect the future vision of the local community or industry.

- Identifying regional issues
  - It is essential to identify regional issues and set appropriate goals in the area.

- Investigating regional issues
  - Municipality should lead to identify regional issues by literature such as statistical survey data and interview questionnaire survey of the stakeholders.

<table>
<thead>
<tr>
<th>Major situations in the area</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Economic characteristics</td>
<td>Major industries, major products, etc.</td>
</tr>
<tr>
<td>Societal characteristics</td>
<td>Population, number of households, variations in population and households, cultural characteristics, etc.</td>
</tr>
<tr>
<td>Geographic characteristics</td>
<td>Land area, access to major cities</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Examples of regional issues</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Social economics</td>
<td>Aging and depopulation, stagnant prices of agricultural products, etc.</td>
</tr>
<tr>
<td>Environment</td>
<td>Limited waste disposal capacity, water pollution caused by waste, etc.</td>
</tr>
</tbody>
</table>

(4) Setting the target area

- Consideration in setting the target area (including whether to narrow the target area)
  - The target area of the Biomass Town Plan is the operational coverage of the biomass conversion facilities. It is generally determined based on the distribution of biomass sources, needs of the biomass-derived products, and cost/efficiency of biomass conversion.
  - Living area of the farmers and residents also need to be considered, since their participation is essential to formulate the Biomass Town Plan.
  - The target area of the Biomass Town Plan does not have to cover the entire pilot municipality. In fact, by fixing administrative district, settlement or farmers association in the pilot municipality, the participation of local community and farmers associations can be expected in order to collect biomass, separate household waste, and use biomass-derived compost.
  - The target area as the entire municipality or specific district in the municipality should be selected according to the priorities of the regional issues to be solved.

- Points to consider in narrowing the target area
  - Fixed area having strong social and economic relationships. (Therefore several districts or settlements can be set as one target area.)
  - Area with established local community organization or farmers association.
  - Area with highly-prioritized issues to be solved.
  - The population of approximately 10,000 is appropriate for local community and farmers association to participate from our experiences.

- Re-consideration of the regional issues
  - The current situations and the regional issues need to be re-considered in the fixed narrow area, after the relevant local community participates in the narrowed target area.