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Participatory Communication and Acceptance of Alternative Energy Plant A case study of the Biomass Power plant acceptance from the community of Pa Sak and Wiang Yong district in Lamphun Province

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Abstract

The purpose of this study is to detail the processes and communication strategies of biomass power plants and to generate awareness. Community in Pa Sak and Wiang Yong District, Lamphun Province continue the operation of the power plant and study the relationship between community participation and awareness of the operation of the power plant. The first part deals with the steps and strategies of participatory communication. Qualitative research is used to interview a person involved in the communication of the power plant and the community. The second part involves understanding the level of participation occurring in the relationship between community and the power plant. Participation in project implementation is with acceptance of power plant operations. The quantitative research uses survey with a questionnaire and tests hypotheses using statistical correlation. At 0.01 significance level, the research found that power plants use communication processes that focus on community participation at all stages. From the planning stage of methods and the evaluation process it emphasizes the use of communication strategies. The strategy for engagement is for involving the community to take part in every step. Helps make the community more trusting with each other. When the community is concerned about any issues, the power plants also consultants with all parties in a timely and sincere manner to address such problems. When the community trusts and sees the benefits of biomass power plants to the community, the acceptance of the operation of the power plant will be possible. The results of the study show the relationship of community participation level to acceptance of the operation of the power plant. The results showed that the positive relationship between the variables at the statistical significance level 0.01 means that the community is engaged well with the biomass plant. Whether engaging in communication or participating in the implementation of projects is very much a decision of the community, they will have to accept the operation of the power plant. Acceptance for the development of alternative energy can be measured efficiently only by detailed analysis of the participatory data.

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Also, acceptance will occur only when there is an opportunity for all sectors to exchange, learn and participate in every step of the process as all sectors are part of the operation.

Keywords: participatory communication, renewable energy, biomass power plant.

1. Introduction

Electricity demand in Thailand is expected to increase every year. Based on data from Energy Policy and Planning Office, The Department of Energy reported that 60 to 25 on the year in 2014, demand for electricity in all fields including economy was 168,685 GWh in the year 2015, demand rose to 174,833 gigabytes Watt hours and in 2016 increased to 182,847 watt hours. The power generation capacity in Thailand in 2016 is 199,567 gigawatt hours. (Energy Policy and Planning Office, Ministry of Energy, 2017). Although current electricity capacity can support the demand the increasing demand for electricity every year as well as the rapidly depletion of energy resources and greater dependence on foreign energy have put Thailand at much greater energy risk. The Bank of Thailand has analyzed that the dependence on natural gas for electricity generation is extremely risky in the future. As the natural gas in the Gulf of Thailand drops sharply, it is estimated that if the current production level is maintained Natural gas will be exhausted from the Gulf of Thailand (Phattharaporn Hirunvong and Singhaphan Singhaseni, 2015). Energy sources imported from neighboring countries such as Myanmar and Laos are a risk as well. These neighbors have high economic growth rate. Soon, the governments of each country will have to reserve resources to support their own expansion. In 2015, the Ministry of Energy has prepared a plan to develop Thailand's electricity generation capacity to serve as the main plan for energy development in Thailand. The two major energy policies, the Energy Plan and the 12th National Economic and Social Development Plan (2060-2021) focuses on building energy security, increasing efficiency of power consumption and promotion of alternative energy and clean energy. Energy management is required to increase the capacity of efficient production and use of renewable energy and clean energy (Office of the National Economics and Social Development Board, Prime Minister’s Office 2016)

Currently, the biomass power plant is a well-known alternative power plant. A model of biomass-based energy management includes environmental management and participation on the benefits to the community.

It is a source of learning for the community and external agencies and has been awarded the "Outstanding Performance Award" by the Department of Alternative Energy for Community Engagement. Both local, national and international awards such as the ASEAN Energy Awards 2013, Cogeneration Category of the ASEAN Renewable Energy Awards 2013 by ASEAN Centre for Energy in Malaysia award is laudable. Promote and support the Sufficiency Energy Community Project. Community Energy for Communities 2013 by the Senate Committee, Ministry of Energy National Research Council of Thailand and the University and in the year 2012 received a certificate from the Ministry of Industry in the project for a harmonious coexistence between community and industry as well. Development of Industrial Works for Social Responsibility for the Corporate Social Responsibility (CSR-DIW Awards).

This study is targeted towards the participatory communication process. The study of Biogas plant involves steps and strategies as well as the relationship between the level of participation and the acceptance level of the operation of the plant. To learn from the lessons of this power plant, communication was made to the adoption of the CH buttons for society at both the local and national level.

2. The problem

- United Cogeneration has procedures and strategies. How can communication contribute to the acceptance of the surrounding community?

3. Objective

- To study the steps and strategies. Participatory communication to create community acceptance of the operation of biomass power plants.
- To study the relationship of the level of participation of the surrounding community to the acceptance of the operation of the biomass power plant.

4. Assumptions Research

- The level of community involvement in the surrounding areas biomass power plants is positively correlated with the level of acceptance of the operation of the power plant
- The level of participation in community projects surrounding the biomass power plant is positively correlated to the level of acceptance of the operation of the power plant.

5. Review the concept of communication involved (Participatory Communication).

Participatory communication is a process of training members in society about the process of sharing, thinking together, listening and respecting others' ideas. Recognize their rights and duties. Contribute to social issues. Exchange News Together, find common approaches and decisions based on complete information. (Parichart Sathapitanon, 2006)

For process of communication, Phuangchompoo, Chaiala Saengrungruangroj (2013) proposed that it consists of three main stages:

Step 1: The Planning is a process of action research that allows communities to get involved in problem identification. Searching for solutions and corrective action.

Step 2: The practice is to involve the community in the implementation.

Step 3. The monitoring and evaluation of the community to contribute to the mutual learning. Whether it be success or failure, the objective is to lead improvement, solve problems and eventually develop.

However, it is imperative to have successful communication in every step of the way. Help drive such activities such as media selection and design options in this direction. In accordance with the audience, the context will make the achievement of the objectives set out by planning ahead, keeping the target audience, who are involved in the communication process good through the communication channels of the community. Exchange of data, information in community which are fair and beneficial to all parties should be the general strategy adopted in participatory communications, including strategic use of media.

6. Research Methodology

This study is divided into two parts: the first studies the process and communication strategy as part of a Sahacogen Green Co., Ltd. which will use qualitative research through in-depth interviews of persons associated with the responsibility of Power Plant and Community Communications The second part studies the relationship between the degree of participation in communication and the level of participation in project implementation and acceptance. The biomass power plant of a qualified community space in the peripheral quantitative research survey uses a standard questionnaire.

The samples used in this study were divided into two parts: qualitative research samples and quantitative research samples. They are as follows:

Sample for Qualitative Education will be interviewed in two groups:

1. Personnel of the Sahacogen Green Co., Ltd. with a mission to communicate directly with a group of 4 people.

2. Communities around the power plant and stakeholder groups: The operation of the biomass power plant is based on a selective approach, specifically for community leaders. Head of unit or organization with supervisory duties play an important role in communicating at the local level, including with community leaders, local media thinkers, Community Development Organization and government of all 15 members.

For example, for Quantitative study it will be studied by people aged 18 years and over and who reside in the community. The area around the biomass power plant in a 1-kilometer radius is Moo 5, Ban Nong Pla Moo 12, Ban San Luang, Moo 15, Ban Nam Luang, Tambon Pa Sak, Amphoe Mueang, Lamphun, and Moo 5 Ban Mae Kham Pa Kham, Young Muang Lamphun. According to the number of samples of Taro at Yamane brings attention to random samples used to collect survey of the population living around the power plant. The reliability is 95%. Tolerance level accepted is no less than five at significance level of 0.05 as samples used in this study consists of 393 people and not the total sample for convenience. The researcher increased the sample size to 400 questionnaires using quota sampling.

For data analysis in quantitative research Pearson's Product Moment Correlation Coefficient is used to find the relationship between hypotheses. The statistical significance was 0.01. The hypothesis was as follows:

Independent variables are classified into two, including the level of the course the participants have in the communication and the level of participation in the Project implementation. The process is as follows:

The level of participation in communication is divided into 3 levels.

Level 1 Participation as receiver/user = 1 point

Level 2 Participation as a facilitator Producer / Contributor = 2 points

Level 3 Participation as Planner and Policy = 3 points

Variable levels of participation Project implementation process is divided into five levels:

Level 1 Providing information = 1 point

Level 2 Listening to opinion = 2 points

Level 3 Take a role = 3 points.

Level 4 Leading to collaboration = 4 points

Level 5 Create empowerment = 5 points

For variable levels of acceptable operation of the power plant, the research will provide questionnaire to assess the level of acceptance divided into five levels:

Level 1 Poor = 1 point

Level 2 Fair = 2 points.

Level 3 Average = 3 points

Level 4 good = 4 points

Level 5 Excellent = 5 points

7. Summary of research results

This research will divide the results of the study into 2 parts:

7.1 Steps and Strategies for Participatory Communication:

7.1.1 In the participatory communication process there are 3 main steps:

A. Power Plant Planning: Kurdistan project before founding the plants found in the area faced opposition to the construction of power plant due to waste that cannot be managed successfully.

It also provides information on the different kinds of people in other areas. That became a case study for dissemination of information through various media across the country and how it may affect between the resistance groups. Both publicly and financially, especially for disadvantaged groups. This is a stage for moving to a local political arena or to call for self-expression. The power plant is focused on communicating with the community and stakeholder groups. It is defined as the communication policy of the organization where the people or stakeholders can express their views. Exchange of feedback is made to seek alternatives and decisions.

If the project is appropriate and accepted from the beginning until the monitoring and evaluation, the company of the Corporation of Technology Co., Ltd. works as a consultant in the preparation of the report of public participation. They also prepare team to communicate with a dedicated community of technicians who are technically skilled in biomass production.

The staff is knowledgeable about growing trees. Staff with expertise in environmental management and staff with technical expertise have involvement in public relations.

For the purpose of analyzing the target groups for communication, power plants are divided into five groups:

- People living in the area around the power plant.

- Community leaders include community leaders such as village headman, village headman or community leader. And thought leaders in the community who are respected by teachers, former village headman, and former village headman. Village volunteers (PMO).

- Groups composed of units of local governments that are municipalities and subdistrict administrative organizations where regional government agencies are involved. Permit to take care of the lifestyle and good living conditions for the community are handled by Lamphun Industrial Office, Office of Natural Resources and Environment, Lamphun Province Energy Office and Provincial Electricity Authority of Lamphun

- Local media groups: Lamphun Press and Media Association, local media, etc.

- Local politicians, independent organizations, customers and partners such as factories in the industrial park and Community Development Organization of Lamphun province.

The power plants have planned content communication and methods appropriate to each target group.

B. Procedure: The power plant has procedures to communicate with the community. From the beginning, they find a representative in the community to work as a team. Representatives of community members and the power plant are selected by local leaders and local leaders to have two people coming together as a team communication in order to coordinate the operation related between the project and the community. Serving as a medium of communication between the community and the power to reflect a reactive response and resistance from the community for the duration of the project to be carried out step by step process has been handled properly. Fit to the situation and the needs of the community is also taken care of.

The start of the project is not yet complete. Therefore, the two community representatives serve as coordinators for appointments with community leaders in the area surrounding the power plant.

By formal and informal meetings individual visits group meeting to get acquainted with community leaders, who own the area, local governmentagencies, thought leaders and community representatives. They share ideas and learn Tradition Way of life in the community, along with the company and project information from the report to engage the people of the power plant found to have a meeting with government agencies, according to the plans laid out. Meeting community leaders in the community around the power plant by organizing sub-group meetings and meeting of thought leaders in the community around the power plant is important. Unofficial leaders, such as the Abbot and the school director, etc., are continued to be invited to listen to comments.

In addition, team communication meetings of Sahacogen Green Co., Ltd. has been visited in the monthly meeting of the village to offer information on a variety of media, such as media VDO. Brochure Project Summary Presentation documents can be distributed as media and the community can be kept as evidence. At the meeting, these plants will get more feedback from the community from the discussions with the leaders and community members attending the hearing. Questions related to biomass production, as well as suggestions for appropriate use of media are addressed. The communication of the power plant's records and questionnaires include suggestions from the community to improve and more content to implement in the next village meeting.

In addition, the Biogas Green Coal Biomass Power Plant is focusing on community participation to create a relationship and create a way to meet people in the community through community relations channels such as attending religious ceremonies, local cultural events and continuous participation in the activities of agencies and communities around the power plant. Community Relations Officers serve as coordinators for participation and support for community activities such as support for seedlings. Organizing activities for the environment Scholarship Support involves the role of a consultant to help solve the problem, to help communities such as improving roads, utilities, utilities, etc., in order to build a good relationship between the powerhouse and the community. Participation in community activities creates a sense of familiarity. Creating a friendly relationship between power plant personnel and members of the community is important.

Biomass Power Plant in Taiwan Cogen Green Plan community conducts events in the first year to plan, budget and increase participation of the local community in various fields thoroughly and consistently.

To communicate the information, it is also important to establish a collaborative network between power plants and community leaders. The development of community leaders, the power plant has brought community representatives to study off-site biomass power plant prototype to create awareness about the project to produce energy from biomass up to the expectations for Representatives attending the study who will be able to communicate or tell the community members. Users do not have to join a study visit to the Sahacogen Green Co., Ltd. led by community leaders, community representatives, Government Agencies. The media in the area to study 3 times. The first study of biomass power plant was in the province of Phichit. There were 13 participants, the second was a study on Biomass Power Plant in Buriram: with 80 participants and the third was a biomass power plant in Prachinburi with participation of 16 people,
including three sessions with community leaders who participated in a study visit of 109 people.

C. The evaluation of the power plant places emphasis on the participation of various sectors. To evaluate the performance of a power plant especially the issue of pollution and community benefit by the evaluation team. Each kit consists of representatives from various sectors is that they represent a community representative government. Representatives of the power plant's W inter act together to coordinate information and evaluation of the project and disseminate this information to the community in the area around the project. Strengthen understanding between the community and the entrepreneurial company and coordinate with relevant agencies including consideration for assistance to support the operation as necessary, proposed to the provincial governor to issue a notice to the public.

In addition to tracking and monitoring the work after the construction of the project. The company has provided opportunities for the community to participate in the forum through community leaders who receive complaint box through direct line and regularly present information through the monthly meetings of the local government.

7.1.2 Strategic communication
involved include strategic communications to public relations. Media strategy use substances and strategies for community engagement. Details are as follows:

A. Communication strategies for public relations: in addition to the power plant, to promote the normal operation is to create a body of both the management powerhouse with good governance principles to care of the staff production of quality products which does not affect the community and the environment. Along with the business that generates benefits to society, power plants also adopt aggressive public relations strategies. To create a relationship with the target audience, including the linking of business operations of the organization, community engagement and community activities such as mass relations help recruiting people in the community to work with organizations. And for social or public interest, communicating with the community adheres to the principle of providing truthful information and keeping the promises it provide. Community Relations Phone is the beginning of familiarity for the community. Creating a dissent by preventing the problem of resistance and reducing friction from the community is possible in the beginning, effectively communicating to gain understanding and acceptance of the operation of the power plant.

B. Media strategy: Sahacogen Green Co., Ltd. focuses on using a variety of media, including personal media, press and media activities, public relations. The most powerful, for them, is a personal media especially, a local people with credibility and respect from the community. The reason is that they have a similar culture which is an important factor that enables the trust and recognition of community. Plus, it has a two-way communication which can communicate quickly to reduce concerns and relieve community problems immediately. In addition to personal media, power plant gives also an important for media Community Activities in order to engage the community in terms of participation in communication and participation in the project. In addition, community relations media is a way for people in the community to know about biomass. Sahacogen Green Co., Ltd. helps to promote the image of power plants in community support and build community involvement in the area surrounding the power plant. In the media, power plant uses both local newspapers and radio to disseminate information on two aspects of he project to the dissemination of knowledge on biomass and to promote information and create a good image for the power plant.

C. Strategic use of the power plant will focus on the design of the media and its participation in project ownership. The benefits of the project, such as the design of the motto, the power plant will use the term "biomass energy" as "Community-based Energy", "Biomass Energy Community", "Environmentally friendly energy", etc. In addition, the power plant will also try to avoid using words that might give rise to negative feelings like to call themselves such as "Biomass Power Plant", but uses the word "biomass power generation" instead.

D. A strategy to establish a joint forum on the power plant: With communication to the community, the power plant will follow the communication by listening to people. Return from the community in various ways, such as small group meetings, direct poll lines and formal hearing. When the communication is known the power plant will use the community consultation to resolve the conflict. It also includes developing better relationships with the community. There are many forms of consultation such as community meetings, informal meetings where the idea of the community, including the establishment of a working group is considered. It consists of people from power plants and representatives from the community.

7.2 Relationships of participation levels: Community involvement surrounding areas, with the adoption of the action. Biomass power plant study involved two hypotheses that can be made. The results can be summarized as follows:

2.

A. The relationship of community participation level in surrounding community varies with the acceptance level of the biomass power plant from the analysis of the correlation coefficient between the level of participation in the communication of the community with an acceptable level of operation of the power plant found that the relationship is statistically significant at the level of 0.0: 1, with a value r (0, 0.277), meaning that the level of participation is good. In essence, the community has a positive relationship with acceptance of the operation of the power plant

B. Relationship Level of participation is important in the implementation of the surrounding community project as it increases the acceptance level of the operation of the biomass power plant as evident from the analysis of the correlation coefficient between Levels of participation. The relationship was statistically found to be significant at 0.01 by the value r = 0.7 to 99, meaning that the level of participation in the Community action Positively correlated with acceptance of the operation of the power plant.

Based on the hypothesis test. It is concluded that when the community is involved, a biomass power plant will contribute to communicate or participate in a project as much in the community as it would be more acceptable to the operation of the power plant.

8. Discuss the results of the research.

National Economic and Social Development Plan No. 12 (2017-2021) was focused on making the "philosophy of sufficiency economy" in the way developing countries continued to Plan No. 9 -11 to strengthen immunity and help Thai society to stand firmly. Immune and risk management is also appropriate in this case. As a result, the country's development becomes balanced and sustainable. In terms of energy, the plan aims to promote the use of renewable energy and clean energy, both under the Alternative Energy and Alternative Energy Development Plan (255 8 -25 79). The Ministry of Energy has designated biomass as part of renewable energy for electricity generation as part of this strategy. It supports households and communities to participate in the production of renewable energy (Office of Energy Policy and Planning, Department of Energy, 2559 b). However, in the recent past. Power plants often affect the community adversely. State uses one-way communication to involve the community who do not have the opportunity to take part in the process. As a result, community distrust of the power plant will be rebuilt and lead to increased resistance (Energy Research Institute. Chulalongkorn University, 2015). Therefore, the understanding and acceptance of the community cannot use one-way communication like before but it must focus on the community to reduce suspicion and trust. For accepting the operation of the power plant, it is necessary to use participatory communication and involve the community in the process. In addition to providing the community with the information they need to gain the benefit of setting up a biomass power plant, another way to involve the community is by presenting problems that cause the community to be anxious. This will lead to the attention of all sectors to address the problem or reduce the concern.

Acceptance of Sahacogen Green Co., Ltd. Community in Canton, Pa Sak and Wiang Yong, Muang Lamphun was helped by the use of participatory communication processes focused on the involvement of the community in the process.

From the planning stage, method and the evaluation process emphasize the use of communication strategies that create the same. The strategy for engaging the community to take part in all the steps made to reduce distrust when the community was concerned about the issue of any power plant is done through a joint consultation with all parties. Timeliness and sincerity to address such issues will help gain community trust and help them see the benefits of the biomass power plant in the community and results in the acceptance of the operation of the power plant. This study is consistent with research from multiple studies on the adoption of the communities around the plant in an area outside the region mentioned earlier such as of Chankit Chearapan (2013), Natha Ruttakul (2012) and Woraon Meksawas (2009). Also are the studies on the acceptance of community power plants in Nakhon Si Thammarat, Chachoengsao and Rayong provinces.

It is noteworthy that in testing the hypothesis of this research, it was found that both the "participation level of communication" and the "participation level of the project" of the community were positively correlated with acceptance of the operation of the power plant. The results are as follows. The correlation coefficient was calculated. The correlation coefficient of the "participation level of communication" with community acceptance was low ($r = 0.277$), while the "level of participation in the project" and the acceptance of the community was high.

Participatory communication plays an important role in community acceptance of the operation of the power plant. But the communication process alone may not be sufficient for community decision-making. Operation of the power plant also needs to be focused on. Enhancing the role of the community to be truly involved in all stages is critical. Implementation of the project together with the community as part of the renewable energy production at this plant is most important. As part of the community, awareness is required to build acceptance for renewable energy development. Participatory information input is important to have the true acceptance from the community and will occur only when there real engagement involved with all sections of the society. It's a great opportunity for all sectors to exchange, learn and participate in every step of the process as all sectors are critical part of the operation of the power plant.

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