POLICY RECOMMENDATION FOR COAL BLENDING FACILITY TO IMPROVE COAL QUALITY AND RESERVE IN INDONESIA

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Abstract - This research aims to provide policy recommendations for the Government of Indonesia to build Coal Blending Facility (CBF) to maximize the coal production in the country. The background of this study is due to the current Domestic Market Obligation (DMO) policy has not been able to fulfill domestic requirement between 2015 and 2017. The unmet target of DMO policy shows that the policy is not fully effective. One of the causes is the gap between the coal specification of the mine, especially the calorific coal less than 4,000 kcal / kg, with the specifications required by domestic end-users. This situation has become a dilemma because half of Indonesia's coal reserves are low-calorie coal and have not been fully utilized. Moreover, this condition can inhibit the shift of coal management paradigm set by the Government, where coal is not only limited to commodities, but more emphasized as development capital. This research uses qualitative approach to understand the perspective of the key stakeholders through purposive interviews. In analyzing the problem, this research uses Soft Systems Methodology approach to explore the complex problematic situations that arise in human activity.To solve a problem,Policy Analysis framework is used to generate recommendations.

Keywords - Coal Blending Facility, Domestic Market Obligation, Policy Analysis,Soft System Methodology

I. INTRODUCTION

Indonesia has an important role as one of the world's coal suppliers. As the coal producer, Indonesia sits as the 5th largest coal producer globally and the second largest coal exporting country after Australia (Indonesia Bureau of Statistics, 2017). Nationally, coal production growth is able to encourage increased utilization of coal in the country, especially for power generation sector and industrial sector. But this is the problem, when the domestic economy is increasingly dependent on coal resources, the specification of coal products from mines sometimes does not match the coal specifications needed by power plants. The current Domestic Market Obligation (DMO) policy still reflects the percentage of coal production to be sold domestically, but not yet specific about the calorie level, total water content, sulfur content, and ash content according to the needs of the end-user in the country. If viewed from the domestic coal allocation based on the DMO policy it can be ascertained that the figures listed are the agreed figures between government, coal producer, and coal end-user.The different result of DMO realization to DMO target in 2015 to 2017 consecutively explains that DMO policy is not fully effective as expected. Table 1 illustrates that the largest coal consumer is power plant owned by PT PLN (Persero) as well as more than 80% of total coal consuming.

Table 1. Coal Allocation based on DMO Policy (in tons)

No	End User	Years			Quality (kcal/kg)
		2015	2016	2017	
1	POWER PLANT	74,000,000	86,000,000	103,000,000	3,800 – 6,150
2	METALURGI	3,582,000	4,648,000	4,648,000	4,200 – 7,400
	a. PT Krakatau Steel &Group :				
	1. PT Krakatau Steel	222,000	968,000	968,000	
	2. PT Krakatau Posco	2,195,000	2,195,000	2,195,000	
	3. Meratus Jaya Iron &Steel	400,000	400,000	400,000	
	b. PT Antam	565,000	885,000	885,000	
	c. PT Vale	200,000	200,000	200,000	
3	FERTILIZER	1,305,700	1,980,200	1,995,200	4,200 – 4,910
	a. PT Pupuk Sriwijaya	30,500	705,000	720,000	
	b. PT Pupuk Iskandar Muda	0	0	0	
	c. PT Pupuk Kujang Cikampek	0	0	0	
	d. PT Petrokimia Gresik	475,200	475,200	475,200	
	e. PT Pupuk Kalimantan Timur	800,000	800,000	800,000	
4	CEMENT	10,542,301	10,882,837	11,833,167	4,900 –6,499

	a. PT Semen Holcim	1,700,000	1,850,000	1,850,000	
	b. PT Semen Indonesia	5,999,295	6,189,831	7,140,161	
	c. Others cement producer	2,843,006	2,843,006	2,843,006	
5	TEXTILE	2,200,000	2,390,000	2,950,000	4,200 – 5,600
6	PULP	650,000	700,000	760,000	4,500 – 5,500
7	BRIQUETTE	30,000	30,000	30,000	>3,800
TOTAL TARGET		92,310,001	106,631,037	125,216,367	
TOTAL REALIZATION		85,950,000	90,550,000	97,000,000	
GAP		6,360,001	16,081,037	28,216,367	

Source : Statistical Data by DGMC, 2017

Meanwhile, domestic coal consumption continues to increase due to government's Electricity Program 35,000 MW. Coal is still a primadonna fuel, because its price is relatively cheaper than other energy sources. Recently, the government's paradigm on natural resources is changing gradually, which no longer considers coal as a commodity but is more emphasized as development capital as stated in Law No. 4/2009 on Mineral and Coal Mining. By utilizing the national coal blending facility, Indonesia can play a role as a supplier of domestic and global coal, with coal source from Indonesia and other supplier countries.Coal blending facility (CBF) is a facility used for mixing several types of coal with different specifications to produce coal with the desired specifications. CBF can be erected in the location of coal producers and/or at the location of coal users. At present, several large-scale coal producers in Indonesia already have CBF as a facility to support their coal sales, such as those owned by PT Indotambangraya Megah group and PT Bayan Resources group. CBF on the coal user side is currently not available in Indonesia.

Based on the description above, it can be understood that the most dominant coal consumer is power plant. However, until now, the existing coal seems unable to meet the national needs, due to the difference in specification/quality of coal mined to spesification required by power plant.What distinguishes the quality of coal is determined by the amount of water (moisture), volatile matter, solid carbon, and ash, which affects calories from coal reserves as well. However, because coal is a non-renewable natural resource, it needs another way to be maximally utilized.

Currently coal processing is conducted only limited to crushing, washing, and sizing. But it has not been able to optimize the specification difference, so it is needed other things that are better able to utilize Indonesian coal into the type of cooking coal.Nationally, coal production growth is able to encourage increased utilization of coal in the country, especially for power generation sector and industrial sector. But here is the problem, when the domestic economy is increasingly dependent on coal, the specification of coal products from the mine sometimes does not match the specification of coal required by power plant. CBF is required because the original specifications of mined coal are not always able to meet coal specifications required by coal users. If the specifications are not in accordance with market demand, then the existing coal reserves can not be mined. By using CBF, all coal reserves can be mined and absorbed by the market after mixing. CBF can help optimize the utilization of coal resources and reserves, optimize the selling value of coal, and increase the market share of Indonesian coal.By looking at the main problem which is the difference between specification of coal in the end-user and specification of coal from site and thinking about long term investment so there must be a blending scenario (mixing coal between low quality and high quality) to meet the specification of power plant in existing power plant but in this case PLN/Government does not have a coal blending facility. CBF can be in the coal producer's location as well as at the location of coal users, so the long-term supply of coal supply can be fulfilled.

Based on those issues, the research questions for this study are: 1) What are the current policies associated with establishing CBF?, 2) How is the policy scheme that encourages the establishment of CBF so that the needs of end users at domestic and abroad can be fulfilled in the long term?

II. METHODS

In order to answer the proposed research questions, the framework for this research is depicted on Figure 1.

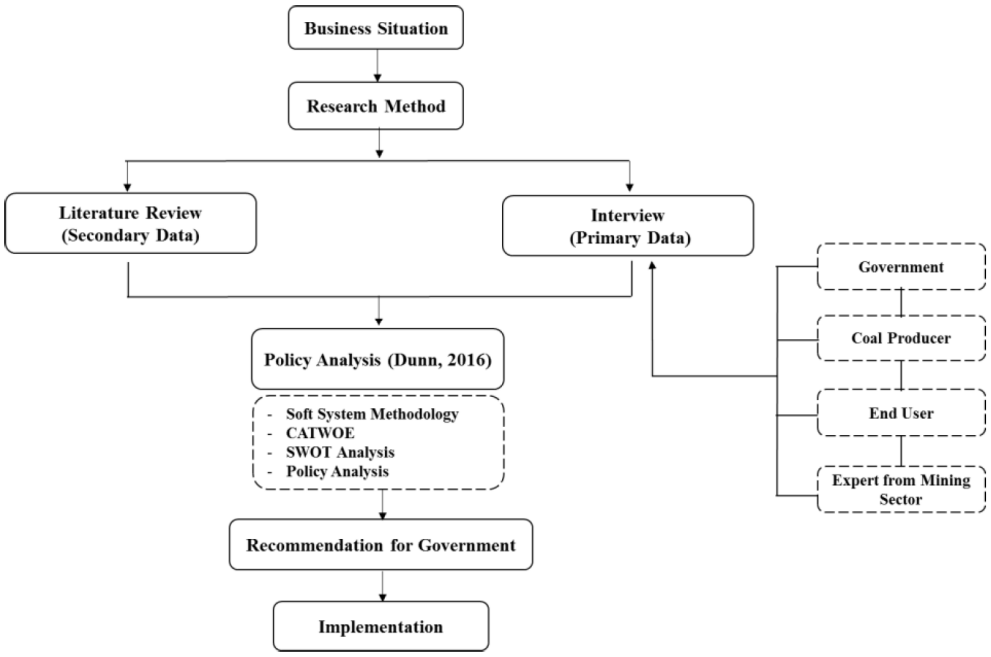


Figure 1 Conceptual Framework

This research uses qualitative method, which is based on primary data and secondary data. Primary data were obtained through purposive interviews with coal producers, coal end-users, and government. In particular, interviews were conducted to determine the level of demand and response to CBF. As representative of coal producers are PT Adani Global and PT Ganda Alam Makmur, both of which produce low-calorie coal (calorific value <4,000 kcal/kg). As a representative of coal end- users, PT PLN controls more than 80% of the domestic coal user market share. To interview Government, several division representatives are selected, namely Director General of Coal Operations, Section Head of Production Operation Supervision of Coal, Head of Data and Information Sub Division and Head of Sub Division of Legislation, Directorate General of Mineral and Coal - Ministry of Energy and Mineral Resources. Secretary of the National Energy Board - Ministry of Energy and Mineral Resources. Practitioner, Executive Director of ICMA. (see Table 2)

Table 2. Interviewees List

Key Informant	Group	Position	Division
Key Informant 1	Government	Secretariat General of National Energy Council	The National Energy Council has the task of Designing and formulating the National Energy Policy (KEN) to be established by the government with the approval of Parliament Establish the National Energy General Plan (RUEN).
Key Informant 2	Government	Director of Coal Business Development	Directorate of Coal Business Development by Directorate General of Mineral and Coal (DGMC)
Key Informant 3	Government	Head of Supervision Section of Production Operation and Coal Operation	Directorate of Coal Business Development by (DGMC)
Key Informant 4	Government	Head of sub division Data and Information Management	Secretariat Directorate of General of Mineral and Coal
Key Informant 5	Government	Head of sub division drafting of legislation	Secretariat Directorate of General of Mineral and Coal

Key Informant 6	Association	Executive Director	Indonesia Coal Mining Association (ICMA)
Key Informant 7	Practitioners	Chairman	Former Chairman ICMA Former President Director of Berau Coal
Key Informant 8	Coal Producer	Director	Director of Adani Global Company
Key Informant 9	Coal Producer	Managing Director	Managing Director of Ganda Alam Makmur Company
Key Informant 10	End User	Head of the coal unit	PT. PLN (Persero)
Key Informant 11	End User	Head of System Planning Division	PT. PLN (Persero)

Secondary data comes from articles, books, reports, and analysis. The steps follow by analyzing policy-related issues from current conditions and situations. The objective is to produce the appropriate policy recommendations. After all the analysis have been done, it can be illustrated that who the relevant parties are, the assessment of the interview results as the response processed to become the data, resulting in an appropriate recommendation.

The use of Soft System Methodology (SSM), and SWOT analysis is used to look at issues comprehensively and holistically by taking into account the role of stakeholders and related variables. Once found root problem then formed a policy scheme using the theory of Public Policy Analysis (Dunn, 2016).

III. RESULTS AND DISCUSSION

3.1. Interview Analysis by using NVIVOApplication
The interviews conducted become the primary data in determining the steps and recommendations in the future. Several supporting statements of interviews for this case can be used as a general description of the actors / parties involved and provide clear input for this research, as for the important statement of the interviewer's result, as describe in Table 3 as follows:

Table 3. Interview Result on Policy Scheme of CBF

Related Statement (s)	Source
//Blending is a common issue but this is needed because of the varied demand of PLN. The government should think about what incentives can be given to investors, because the private sector is more fitting to develop it. Private sector should be involved, because if the government runs too much bureaucracy.//	K1
//.. It could be for CBF Governments that invest and regulate, or too private. But I think that Indonesia has time to exist, because this need to meet the needs of various domestic, even for the plant also needs varying coal, so that CBF can manage this need. The idea of this CBF should be appointed to be a national issue because in accordance with the Resilience and independence of energy, in this case should the country that has the initiative //	K2
//This CBF should be established not from the government or end users, because the name of the facility required margin, so it must be a third party for the margin to be met. The existing blending is only blending made by the manufacturer or end user to meet their own needs.//	K3
//What the Government needs is a blending facility. Because there are still a lot of low-calorie coal producers who have not been able to sell their products, as well as for the sustainability of national suppliers, input to state revenue where later if domestic needs are fulfilled then blending results can meet export//	K4
// The best of intentions coal blending facility is not the government , but should be given to the private company making a set / public private partnership .Let the government he leaned to have charge / policy requirements and regulations imposed by good to run//	K5
//ICMA supports blending to avoid scarcity of supply, In general, DMO Decree does not give effect to less sensitive because only tonnage sales obligation only. CBF basically agrees that inter-company can coordinate but the use of technology must be able to produce a homogeneous coal. Challenge is a company should not be charged again, how to realize the policy for the company can follow.//	K6
//I agree blending is made if the ends user requires then the demand will be formed. It would be better if the private sector build it because if the government will be hindered by the rules and bureaucracy. The best location of CBF is built by approaching the end user, taking into account the cost rehandling, because commercial coal blending facility can be transported to all end users (PLN, Cement, and Textile). Better to use a CBF license like in the Netherlands.//	K7

//PT. Adani as a 3000 calorie coal producer, very supportive of the government if true will build CBF. Better to use technology silo so the result is more homogeneous as it is in Rotterdam Netherlands. With CBF coal companies will be integrated and will be more mutual support for both domestic and export needs.//	K8
//Currently we are trying blending by bringing coal to the Mahakam river for blending in Samarinda, the result is satisfactory. This means that if CBF is built, very good not only support PLN but help low calorie coal producers. Cost issues for handling will be thought by the company if it is believed the impact of blending will be good in the future. Indonesia as the owner of natural resources must enjoy more results than what it has, I think CBF is perfect for the near future//	K9
// which must grow is demand, so that coal blending become one alternative solution to fulfill domestic energy requirement. In addition to PLN can also be for other industries, it's important why the demand should growth. If the Government is not ready to build CBF, then PLN will do it because for the purposes of supply PLN is willing to help either in the form of shares as this is very important for PLN //	K10
//Before this CBF was formed, build the demand with the help of marketing intelligent by seeking information as much as from all aspects, besides that we pay attention to the natural growth that is household customers, the prediction is the natural growth (Gradual), and the government, social, and industry. If demand is known to its needs, then CBF can determine the amount issued each month.//	K11

Source : Analysis

Qualitative research by using interviews will get full results with different understandings, but the questions submitted to 11 key informants can show that the trend of the data direction, as for the results of the 5 questions I asked as described in Table 4 as follows:

Table 4. Word Cloud Visualization

 It's shown in general the stakeholders considered need to of an improvement policy of dmo a current running.It is especially voiced by coal producer and coal end user. With the producers of coal calories low find it difficult to sell their products in the country while end user coal really need certainty supply on the level of the quality and quantity of certain. The data source associated with word cloudDMO Policy are interviewee KI 1, KI 3, KI 4	 Indonesia has a specification of coal, where the coal from mine in Indonesia has diverse specifications, where coal produced from the mine does not always meet the needs of domestic end users. Constraints that are often faced by coal companies in Indonesia is, the quality of coal is low and the price of coal that does not cover production costs.The data source associated with word cloud Supply of Domestic are interviewee KI 8, KI 3, KI 10
 Many things can be done from coal to maintain the resilience of domestic energy. Coal can be processed into gasification or liquefaction. But the thing that becomes indispensable in the medium and long term	 The incompatibility of coal specifications between producers and end users makes strong grounds that the coal blending facility is needed immediately, and is included in the formulation of the Indonesia Coal

is Coal Blending. Where with the coal blending needs of end users other than PLN can be fulfilled. The data source associated with word cloud Energy Security are interviewee KI 2, KI 1, KI 4	Infrastructure Plan. This infrastructure can be achieved in three ways: Public Service Agency (BLU), Joint Venture and Public Private Partnership. The data source associated with word cloud of Coal Blending Facility are interviewee KI 1, KI 4, KI 8
	From the results of interviews with coal producers, end-users, Ggovernment and coal associations, said that coal blending facility becomes one of the tools to maintain the continuity of coal supply and achieve energy independence. So that the company can synergize for mutual support meet the needs of domestic coal, it is expected that demand will grow due to the certainty of energy supply. The data source associated with word cloud of Coal Blending FacilityIdea are interviewee KI 1, KI 4, KI 8

Source: Interview

3.2. Soft System Methodology Analysis

Soft systems thinking seeks to explore the 'messy' problematic situations that arise in human activity. However, rather than reducing the complexity of the 'mess' so that it can be modelled mathematically (hard systems), soft systems strive to learn from the different perceptions that exist in the minds of the different people involved in the situation (Andrews, 2000). Soft Systems Methodology, in its idealized form, is described as a logical sequence of seven steps (Checkland, 1999, pp. 162-183). The method often used upfront is a focus group. To counter this, individual interviews were done first to get different perspectives. Seven stage of Soft System Methodology:

Since the law no 4 of 2009 was issued, the government is very concerned about the use of domestic coal. The average Domestic Market Obligation (DMO) requirement for state electricity company (PLN) is about 64% of cement demand, fertilizer and others by 2%, and the use of metallurgical industry is 1%. Based on statistical data DGMC, 2017 that since 2011 - 2017 the use of domestic coal does not reach the target, a problematic important enough that Indonesia's coal reserves are still large enough to meet domestic needs, but on the other hand the difference in coal specifications mined to the needs of the plant is very clear.

The government's project to build a power plant of 35,000 Megawatts by 2019 aims to meet the electricity needs of Indonesians from Sabang to Merauke. This will certainly have a significant impact on economic growth outside Java, which previously lacked power supplies.

Based on the description above, we can see that the most dominant coal requirement is for power plant needs. However, until now, the existing coal seems unable to meet the national needs, due to the difference in specification / quality of coal mined to that required by the plant.

The government has committed to realize the supply of electricity amounting to 35000 Megawatts (MW) within 5 years (2014-2019). Over the next 5 years, the government together with PLN and the private sector will build 109 plants; each comprising 35 projects by PLN with a total capacity of 10,681 MW and 74 projects by private / Independent Power Producer (IPP) with a total capacity of 25,904 MW. And in 2015 PLN has signed a power plant contract of 10 thousand MW as the first phase of a total of 35 thousand MW.

Based on these requirements, PLN requests supply guarantee to the Government, it is realized with the issuance of DMO Policy which in this policy the role of coal producer is very important. Coal entrepreneurs are divided into two categories of coal producers with calories> 4000kcal / kg and coal producers with calories <4000 kcal / kg. Coal entrepreneurs in this case aims to find a profit, for calorie coal producers> 4000 kcal / kg this is not a problem where the company can contract directly with the parties who need one of them is with PLN.
Coal producers <4000 kcal / kg need a way to keep their company alive. Low calorie coal producers choose export as a way to sell their coal especially to China and India. To bridge this problem the solution required is the existence of coal blending technology. It takes a leading developer of coal blending technology for the government to realize the achievement of the use of domestic coal needs, based on this matter, the developer asked for a policy that regulates it.The rich picture shown in the Figure 2 and conceptual model shown in the Figure 3 represent the work in progress in this stage.

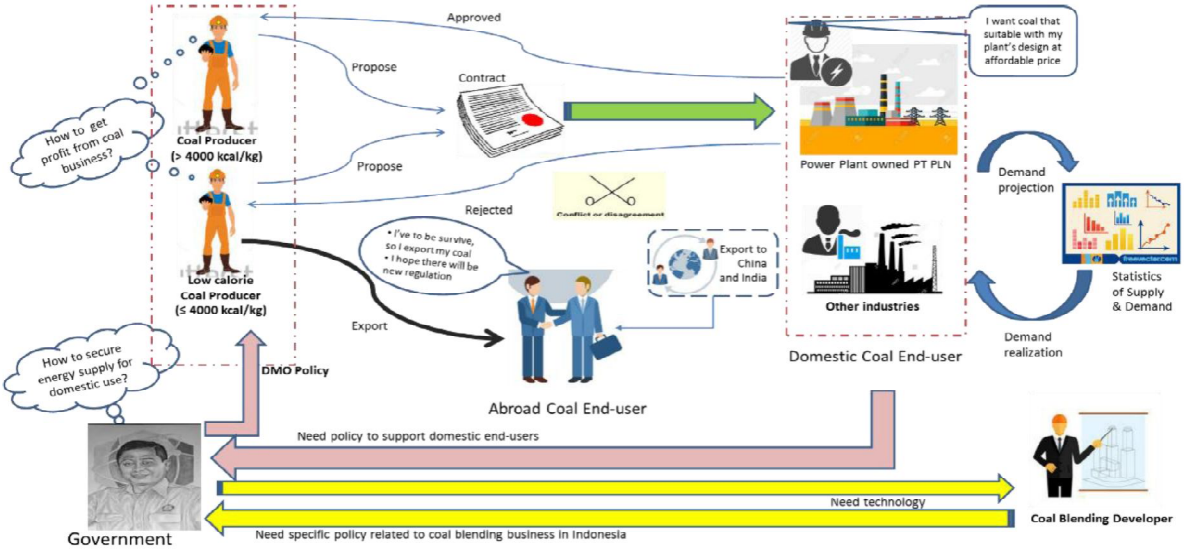


Figure 2. Rich Picture for Policy scheme NCBF in SSM Method
Source: Analysis

Root Definition from CATWOE:
An analysis that requires a system with stakeholders who are able to think together to produce a common understanding. This is stated in the root definition: "The need for regulation related to Coal Blending, as an alternative solution for the availability of energy and the fulfillment of domestic energy needs by involving the Government, Coal Producers, End –users and Providers of advanced Coal Blending Technology"

Customer : The parties who receive the output from the transformation in Coal Blending Facilities are low coal producer and end user (PLN, Cement Industry, Steel Industry)
Actors : The parties who directly involved in Coal Blending Facility are Mining Company, especially for low-medium calorie; End user (PLN, Industry Cement, Industry Steel, Industry Tekstil, Metalurgi, Vertilizer); Government; Shipping
Transformation : The introduction of national coal blending facility policy
World View/Weltanschauung : With the Coal Blending Facility (CBF), low calorie coal can be utilized optimally for domestic development capital.
Owner : Ministry of Energy and Mineral Resources
Environtmental : The latest CBF of technology, is owned by other countries so it requires big capital and technology transfer through joint venture and license

Conceptual Model – Human Activity System

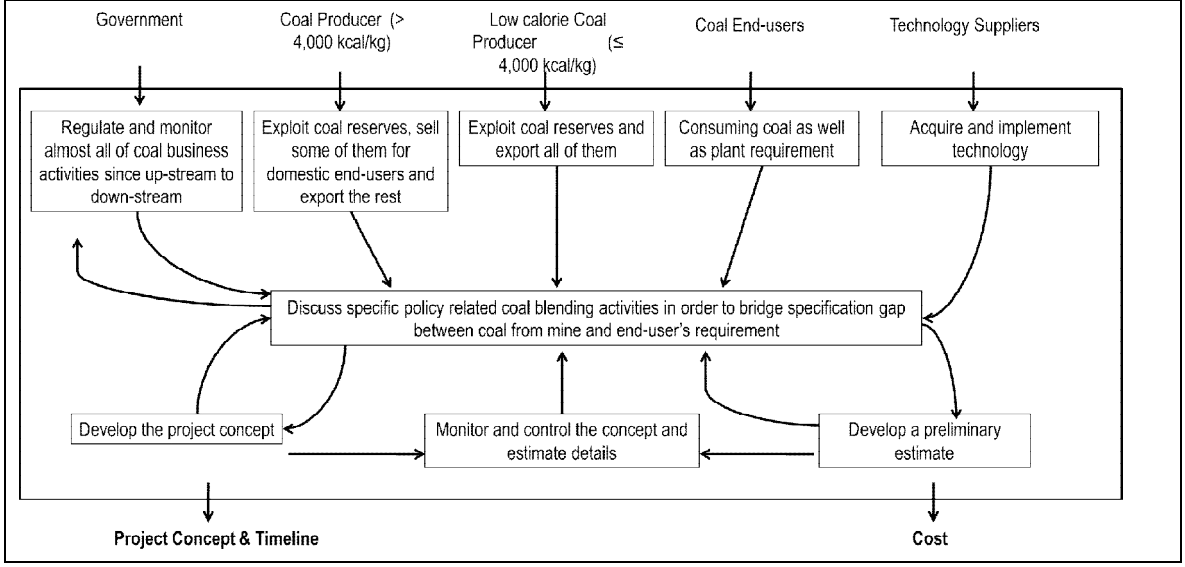


Figure 3. Root Definition, CATWOE and Conceptual Model for Policy Scheme of CBF

The detailed discussion of coal blending policy to bridge the specification differences between coal mining and coal demand end users is:

1. **The Government is represented by the Ministry of Energy and Mineral Resources, the National Energy Board, the Ministry of Finance, and other relevant agencies / agencies. The government perspective that will appear in the discussion include:**
   - The government wants to achieve the effectiveness of DMO policy by proposing CBF as an alternative solution
   - The government asks for coal producers to ensure the supply of coal to be processed in CBF
   - The government works with coal end-users to absorb all CBF-treated coal.
   - The Government will formulate a regulation for CBF development
   - The government asks developers to cooperate with BLU TekMira who play a role in the provision of goods / services for the benefit of public services.
   - Government guarantees ease of investment and licensing in coal blending business.
   - This discussion is discussed in detail in the implementation plan.

2. **Coal Producer is represented by several calorie coal companies> 4,000 kcal / kg and a calorie coal company ≤ 4,000 kcal / kg. The Coal Producer perspective that will appear include:**
   - Producer is willing to allocate some of the coal production to be processed in CBF
   - Producer of calorific coal ≤ 4,000 kcal / kg requested assurance that low calorie coal is absorbed for domestic needs.
   - DMO policy is improved in terms of coal specifications required by coal end-users so that clear needs are related to the quantity and quality of coal required.

3. **Technology Developer is represented by the development of leading coal blending technology. The developer perspective that will emerge, among others:**
   - Developers ask for certainty of regulation related to CBF investment in Indonesia
   - Developers request the certainty of supply and demand of domestic coal
   - Developers propose CBF development cost estimates for further discussion

3.3. Policy Analysis Dunn

The aim of methodology is to help us understand not only the products of policy inquiry but also the process employed to creare these product. The methodology of policy analysis is not confined to the analytical routines of specialized social science fields.

Policy analysis is partly descriptive, but is also normative a term that refers to value judgment about what ought to be in contrast to descriptive statement about what's is. This normative orientation stens from the fact that analyzing policies demand that we choose among desired consequences (end) and preferred courses of action (means). The importance of normative reasoning in policy analysis was well stated by a former undersecretary in the Department of Housing and Urban Development "Our problem is not to do what is right. Our problem is to know what is right, see figure 4.

Observed Policy Outcomes:The condition of domestic coal consumption since 2015 to date does not reach the target that has been determined. Where more than 80% of domestic coal consumption is used for power generation. The average number of DMOs is about 20% of the total national coal production, meaning that the majority of Indonesian coal is for export.

Policy Problem: Why DMO not achieved? Is it due to the absence of a generator that conforms to the specification of the coal? Or the absence of a supportive policy to improve the quality of low calorie coal? What alternatives can make low-calorie coal maxed out? Is there a policy that can encourage the producers or end users to be able to increase low calorie coal?

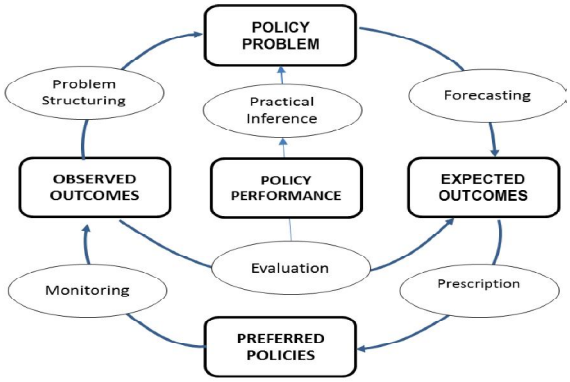


Figure 4. Policy Analysis Dunn
Source: William Dunn (2016)

Expected policy outcomes: To bridge the coal specification gap between the producer and the end user, how likely is it to be done through the construction of a coal blending facility compared to requiring PLN to change the design of the plant according to the current low calorie coal specifications of Indonesia.

Preferred policy: To bridge the coal specification gap between the producer and the end user, how likely is it to be done through the construction of a coal blending facility compared to requiring PLN to

change the design of the plant according to the current low calorie coal specifications of Indonesia.

Policy Performance:From the evaluation of the DMO policy, there is a gap between the established target and the realization of achievement, where the difference is an average of 20 million tons / year from 2015-2017. So far, the evaluation of DMO usage is done through administrative supervision, with the existence of significant annual increment of the Government then direct monitoring to end user.

By using the frame work policy analysis discovered by William Dunn in 2016, the policy proposals can be described as follows:

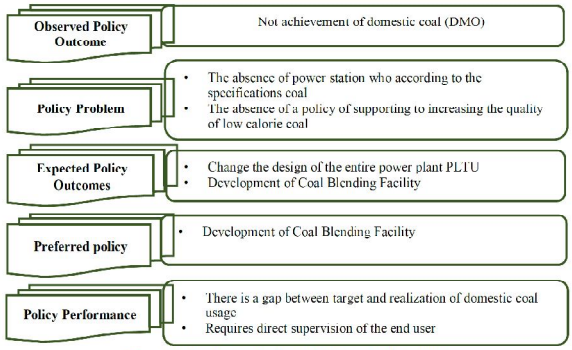


Figure 5. Policy Proposal Analysis by Policy Analysis Dunn

CONCLUSION AND RECOMMENDATION

4.1. CONCLUSION

In accordance with the seventh priority in the RPJMN that is to realize economic independence by moving the strategic sectors of the domestic economy, the priority becomes the basis in formulating the national policy direction of regional development that becomes an integral part of the development agenda contained in Presidential Decree no. 2 Year 2015 on RPJMN 2015-2019. One strategy to achieve this is through the utilization of natural resources, especially coal for domestic purposes. Indonesia is a country endowed with huge reserves and coal resources. Based on data from the Ministry of Energy and Mineral Resources in 2017, Indonesia's coal reserves amounts to 28 billion tons and its resources amounts to 128 billion tons.

Since the issuance of Law no. 4 of 2009 on Mineral and Coal Mining, there is a paradigm shift related to coal previously coal is only considered as a commodity into national development capital. The law reflects the spirit of the Government to optimize its natural resources in order to support the national industry and Government programs in the prosperity of its people.

This is reinforced by the issuance of Government Regulation no. 23 of 2010 concerning the implementation of mineral and coal mining business activities. Article 2 paragraph 1 clearly states that the implementation of mineral and coal mining business activities is aimed at implementing policies in prioritizing the use of minerals and / or coal for domestic purposes.
The regulation of the use of coal for domestic purposes in 2017 is specifically regulated in the Minister of Energy and Mineral Resources Decree no. 2183 K / 30 / MEM / 2017 on the preference of supply of mineral and coal needs for domestic interest. This decree is issued annually since 2009, which requires some coal companies to sell some of their production to the domestic industry. This decision is better known as the Domestic Market Obligation Policy (DMO). Utilization of coal as a source of energy is also contained in the National Energy Policy which has a goal for energy sustainability and independence.

On paper, DMO policy is considered capable of solving problems for the fulfillment of domestic coal where the electricity sector, especially PT PLN (Persero) is the largest domestic coal consumer who consumes about 88 million tons of coal or about 82% of the total allocation of domestic coal set in the policy DMO Year 2017. But based on facts in the field, PT PLN still buy coal in companies that are not subject to DMO obligations and companies that have contracted directly with PLN. In addition, a mismatch between the coal specifications of the mine and the coal specifications required by end-users is also a problem that arises in the field. Both of these have resulted in the realization of the DMO target never reached.

Based on Soft System Methodology and CATWOE analysis, the main issue is the gap between the coal specification of the mine and the specification of coal required by the end user so that there is a need for a policy proposal on the development of CBF to produce specified coal in accordance with the needs of the end user.

4.2. RECOMMENDATION

Based on the projected domestic coal demand and the realization of achievement every year where DMO coal is not always achieved, then the thing required is a proposal or policy recommendation that supports DMO to be achieved. The proposals or recommendations are: Conducting the development of the National Coal Blending Facility (NCBF) with policy proposals from the Directorate General of Mineral and Coal in cooperation with the Public Service Agency (BLU) of Mineral and Coal (Puslitbang TekMira). Based on the above recommendation, BLU will be able to think about cooperation with private sector by purchasing recommended License technology.

4.3. IMPLEMENTATION SCHEDULE

To support the implementation of the recommendation, it is necessary to implement the plan, the control and evaluation system described further in implementation plan.

Stages of activities to develop or make a policy are:

- **Agenda setting** : to define a public issue to be raised on a government agenda. The policy issue is the product or function of a debate about the formulation, details, explanations or judgments of a problem (William Dunn, 2016). Issues to be made are to incorporate recommendations / proposals related to the development of the National Coal Blending Facility.
- **Policy Formulation** : Perform a comprehensive formulation to achieve the optimal level.
- **Policy Implementation** : Refers to actions to achieve the objectives set out in a decision. Turn these decisions into operational patterns and strive to achieve major or minor changes as previously decided
- **Policy Review** : Activities related to estimation or review of policies that include substance, implementation and impact.

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