

# Pros and Cons of Using Local Content for Renewable Projects<sup>1, 2</sup>

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## ABSTRACT

Renewable projects are picking up pace around the world, in developed as well as developing countries. In such projects, developing countries are imposing local content sourcing requirements to protect their markets in the short term and advance their markets for supporting the growth in long term while it has been continuously opposed by developed countries by being cited as a violation of the free trade practices of WTO. Therefore, this paper is developed to analyze the issue of local content requirements (LCR) and uses multi attribute decision making to compare different alternatives such as 0% LCR, <50% LCR, >50% LCR and 100% LCR. Based on this analysis, the author will reach a conclusion on which alternative will serve the best for a nation keeping in mind the short-term benefits as well as long-term effects of adopting such a policy.

**Keywords:** Indo-US Solar Dispute, Renewable Energy, Local Content Requirements (LCR), Environmental Exceptions, World Trade Organization, Free Trade Issues, Paris Climate Agreement.

## INTRODUCTION

The world has been dependent upon fossil fuels for a long time for producing electricity. But now renewable sources of energy have been picking up for electricity production and investment in all countries is flowing in this sector. Earlier many, developing and under developed, countries have been largely dependent upon fossil fuels for electricity generation, given the high initial investment and cost of producing electricity through renewable sources of energy. But nowadays, given that cost of producing energy through renewable sources is decreasing and becoming more viable, countries are moving towards renewables.

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A case in point is India which had set ambitious target of achieving 57% of total electricity capacity to come from non-fossil fuel sources by 2027. But an underdeveloped solar market in its home country has led to increasing reliance on foreign market for buying solar products. This led to high costs of buying in short term as well as long term. Therefore, to build a domestic market and reduce its reliance on imports, India has put domestic content requirements (DCR) restrictions in renewable projects. This will boost the local market and therefore support the government in long term, if not the short term, and achieve its objective of reducing emissions in a quick and inexpensive manner. However, this support for local market is viewed by US as giving undue advantage to home players and has been cited as a violation of free trade law of WTO which can impact India in terms of loss of trade and foreign investment in other sectors.

This raises the question of whether the underdeveloped countries should use such restrictions to develop local markets or should they avoid such actions to not lose out in other areas due to trade restrictions. Therefore, this paper seeks to analyze the impact of domestic content requirements (DCR) in renewable projects and the extent to which a country should use such restrictions.

## **METHODOLOGY**

**STEP 1:** To analyze the percentage of local content requirement that would best serve a nation, Multi Attribute Decision Making (MADM) has been used. Since the attributes are quite subjective this analysis method would be the best to use. We plan to compare the local content requirement ranging from 0% to 100% divided into four scenarios. By using the MADM methods, we will be able to find out the best option for enforcing local content requirements in renewable projects.

## **STEP 2: FEASIBLE ALTERNATIVES/ ATTRIBUTES**

Since a project can be imposed upon the restrictions ranging from 0% to 100%. We have split the choices into 4 different scenarios based on the extent to which it can be practically envisaged. The country can either have no restriction at all, or some restrictions, or high restrictions or an economy can be completely closed by not allowing for any foreign procurement. These scenarios have been split into the four alternatives below:

- 1) Alternative 1 - 0% Local sourcing
- 2) Alternative 2 - < 50% Local sourcing
- 3) Alternative 3 - > 50% Local sourcing
- 4) Alternative 4 - 100% Local sourcing

## SELECTION OF ATTRIBUTES

Local content requirements (LCRs) of a country entails that a portion of goods that are used for production should be sourced from local manufacturers of the respective country. This policy measure generally serves as a condition for companies to avail support from government. It also helps government (especially developing) in meeting its target of developing the industries and advancing the domestic technologies. At the same time countries may get bereft of trade benefits through some restrictions put by global bodies.

We will first look at the advantages and then understand the disadvantages that a country can face if they impose local content requirements in domestic projects.

### Advantages of Local Content Policy

In short term, LCRs increases the demand of some products, which also increases the demand for people, hence employment, brings in new technologies and due to the manufacturing government tax collections also increases. As foreign companies see the domestic production as an opportunity, they start entering the domestic market of imposing countries through routes of FDI. Due to the development of a domestic market, it leads to shorter supply chains and greater predictability of supply in long term. It also drives down the cost of products in the long term. Potential benefit to the green campaign of the world has also been cited as an advantage.

To summarize, **LCR may benefit the country in advancing its technology, security of supply chains and increase in employment.**

### Disadvantages of Local Content Policy

Even these requirements may provide benefit to the developing markets in the short term, this pose a major threat to the global competitiveness of the industries. If the market is not able to serve the demand for products, it will lead to inefficiencies in the market as the buyer is completely dependent upon supplier to meet the project local requirements. This can lead to a delay in investment in the country and thus it's overall growth. According to an OECD study, it has been determined that imposing economies lose industrial competitiveness, a reduction in exports in sectors not targeted by LCR.

To summarize, **LCR can lead to a loss in trade, affect investment in the country and bring inefficiencies in the market.**

This brings us to the following attributes to be used for selection of the preferred alternative: Local technology improvement, security of supply chains of nation, the increase in employment opportunities for youth, impact on trade that a country can face, impact on foreign investments of a country and inefficiencies that will be created in the market due to local players lack of capability to provide supply.

These attributes can be ranked from 1 to 5 based on the impact they are going to create on different policies and then an overall impact can be calculated in the range of 5 to 25 to obtain the cumulative impact of each policy on the selected attributes.

### **STEP 3: DEVELOPMENT OF OUTCOMES**

1. LCR of 0% - Local technology will not pick up pace if a country continues to import from outside and supply chain will be dependent on foreign suppliers making it unsecure. This will also not increase employment opportunities in the country. However, a country won't lose much in its trade and FDI won't be impacted. Inefficiencies in the market won't be high as well as dependency on local suppliers is less.
2. LCR < 50% - With small restrictions on company, local technology will start to develop to a good extent along with employment and which will provide a secure supply chain. But this will have a moderate effect on trade and FDI. The inefficiencies in the market will also develop to a moderate extent.
3. LCR > 50% - With high restriction, local technology and employment will be improved to the best extent but trade and other measures will be impacted the highest. The negative consequences will overshadow the positives obtained in this case.
4. LCR of 100% - A closed industry scenario will not improve the local technology to highest possible extent because the impact that will happen on trade and FDI will lead to almost no exchange of technology which is very crucial to development of local industry. This will therefore be the worst scenario to adopt.

### **STEP 4: SELECTION/ACCEPTANCE CRITERIA**

To select the best alternative, Multi-Attribute Decision Making Analysis has been conducted. The qualitative analysis of the feasible alternatives is assessed against the best attributes identified to find the best policy that can be used. We will choose the ones with least reds and higher cumulative scores.

The scale that has been used is:

<b>Attribute</b>	
Very Positive Impact	5
Positive Impact	4
Neutral Impact	3
Negative Impact	2
Very Negative Impact	1

Assigning the ratings to each policy for each of the attribute, we will obtain the following table:

Attributes	LCR = 0%	LCR < 50%	LCR > 50%	LCR = 100%
Local Tech. Improvement	2	4	5	3
Supply chain security	2	4	5	3
Increase in employment	2	4	5	3
Trade Impact	4	3	3	1
Impact on foreign investment	4	3	1	1
Inefficiencies in the market	4	3	1	1
Cumulative Score	18	21	20	12

It can be seen that Alternative 1 and 4 are the ones with the maximum negatives and least cumulative score as well. Therefore, we will eliminate these 2 options.

## FINDINGS

### STEP 5: ANALYSIS AND COMPARISON OF ALTERNATIVES

Out of the filtered options 2 and 3, we can see through the cumulative score that they are very close. The comparison between these options can be further seen in the MADM ratio scale as below:

Attributes	LCR = 0%	LCR < 50%	LCR > 50%	LCR = 100%
Local Tech. Improvement	0.4	0.8	1	0.6
Supply chain security	0.4	0.8	1	0.6
Increase in employment	0.4	0.8	1	0.6
Trade Impact	0.8	0.6	0.4	0.2
Impact on foreign investment	0.8	0.6	0.2	0.2
Inefficiencies in the market	0.8	0.6	0.2	0.2
Cumulative Score	0.72	0.84	0.76	0.48

Based on the MADM ration scale done above, we can see that Alternative 2 is almost 10% better than Alternative 3. Alternative 2 not only provides for local technology improvement as well as employment increase and at the same time minimizes the impact on trade and other foreign investment. Alternative 3, on the other hand provides for better local improvements as well as employment but lacks more in the trade impact that it can have, and it can create major inefficiencies in the market which can be major problem for the government in the short term. Therefore, there is the trade off between local improvement and foreign impact on the country's growth in the same sector as well as other sectors.

### **STEP 6: SELECTION OF THE PREFERRED ALTERNATIVE - MADM**

Considering the quantitative MADM analysis as well as qualitative analysis we consider the Alternative 2 which shows us that **LCR with less than 50% will provide the maximum advantage** to the country to be the preferred choice for a country. This has proven in the past by different countries that a moderate local content requirement policy has helped countries in achieving the dual objectives of local advancement as well as trade relations with other countries. WTO also provides the relief for such policies through an exception stated in environmental laws where a country can use such measures if it is to support the environmental measures of govt. Therefore, especially for the renewable sector such measures would be of great use to the country to develop both the industry and reduce the dependency on fossil fuels.

### **STEP 7: PERFORMANCE MONITORING AND POST EVALUATION OF RESULTS**

All the alternatives that have been developed in this project have been formed theoretically and will have to be checked practically if it is possible for a country to enforce them. The 6 attributes that have been analyzed are broad but not complete. These attributes can be expanded further, and any other impact should also be analyzed before taking up such policies.

### **CONCLUSION**

To summarize, the paper wanted to answer the impact of domestic content requirements (DCR) in renewable projects and the extent to which a country should use such restrictions.

During the analysis we found out that countries with underdeveloped markets should allow for <50% local content sourcing which will help them not only to develop their markets, increase employment in their country and have stable supply in the long term. In such a case they will lose some trade and create inefficiencies for the companies to survive initially but this can be monitored through effective government intervention.

### **FOLLOW ON RESEARCH**

This paper was just to evaluate which policy of local sourcing would best support a country. However, this paper can be further analyzed to understand how a government should balance the tradeoff while imposing restrictions in local sourcing.

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