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Sustainability Thought 181: Dwarf Green Markets Versus Green Markets: Which one is Environmentally Clean Economy Transition Friendly? Why?

 **Lucio Muñoz**

Independent Qualitative Comparative Researcher / Consultant, Vancouver, BC, Canada

Email: munoz@interchange.ubc.ca

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Abstract

There are two ways of dealing with the environmental pollution problem separating environmentally dirty traditional markets from environmentally clean markets, using dwarf green markets and using green markets. If the goal is to transition from environmentally dirty traditional economies to environmentally clean economies, then understanding which one is friendly and which one is not friendly with such a transition is important for policy making based on science and for understanding the reasons behind non-science-based policy decision-making. And this makes the following topic and question relevant: Dwarf green markets versus green markets: Which one is environmentally clean economy transition friendly? Why? Among the goals of this paper is to provide answers to these questions.

Keywords: Dirty traditional market; Environmentally dirty traditional market; Dwarf green markets; Green markets; Environmentally clean market; Pollution production markets; Pollution-less markets; Environmental pollution problem.

1. Introduction

1.1. The Two Ways to Deal with the Environmental Pollution Problem Separating the Environmentally Dirty Traditional Economy from the Environmentally Clean Economy

Ideas such as dwarf green markets as environmental pollution management markets and green markets as environmental pollution reduction markets can be useful to understand ways to address the environmental pollution problem found between environmentally dirty traditional economies and environmentally clean economies as well as to highlight the usefulness of these approaches in supporting an orderly transition in the future towards an environmentally clean world. These clean market transition ideas were introduced in general as pollution management markets and as pollution reduction markets transitions (Muñoz, 2024) and in particular as both in terms of dwarf green markets ideas (Muñoz, 2023a) and in terms of green markets ideas (Muñoz, 2023b). These clean market transition ideas in terms of environmentally dirty traditional markets (EDTM) are summarized in Figure 1 below:

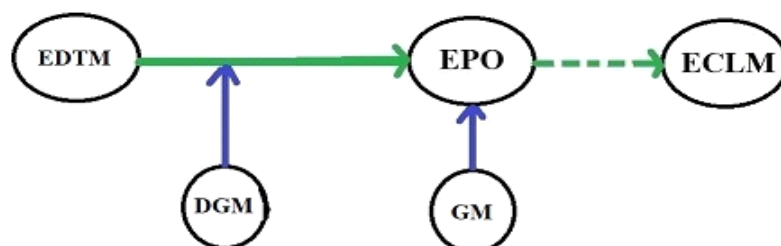


Figure 1 The dwarf green market solution(DGM) and the green market solution(GM) to the environmental pollution problem(EPO)

Figure-1. above tells us that there are two ways of dealing with the environmental pollution problem (EPO) separating the environmentally dirty traditional market (EDTM) from the environmentally clean market (ECLM), namely dwarf green markets (DGM) and green markets (GM), the first one being an environmental patch and the second one being a full fix.

1.2. Linking Dwarf Green Markets and Green Markets to Environmental Clean Market Transition Friendliness

As indicated above, there are two ways of dealing with the environmental pollution problem separating environmentally dirty traditional markets (EDTM) from environmentally clean markets (ECLM), using dwarf green markets (DGM) and using green markets (GM). This pollution production problem (EPO) associated to the working of traditional market thinking (Smith, 1776) was stressed by the Brundtland Commission in 1987 (World Commission on Environment and Development WCED, 1987) and addressed through sustainable development thinking; and later this same pollution production problem (EPO) was the central point of attention of the 2012 Rio +20 conference (United Nations Conference on Sustainable Development UNCSD, 2012a;2012b), who was initially favoring a full environmental fix a la green markets through pollution problem internalization, but in the end, it took the route of a partial fix a la dwarf green markets through pollution management. If the goal is to transition from environmentally dirty traditional economies (EDTM) to environmentally clean economies (ECLM), then understanding which one is friendly and which one is not friendly with such a clean market transition is important for policy making based on science and for understanding the reasons behind non-science-based policy making. And this makes the following topic and question relevant: Dwarf green markets versus green markets: Which one is environmentally clean economy transition friendly? Why? Among the goals of this paper is to provide answers to these questions.

1.3. Objectives

1) To point out the nature of the dwarf green market solution, its consequences once in place, and the type of environmental clean market transition friendliness it has; 2) To point out the nature of the green market solution, its consequences once in place, and the type of environmental clean market transition friendliness it displays; and 3) To contrast the nature of the two solutions to show that one of the solutions moves away and away from the goal of environmentally clean markets once in place.

2. Methodology

First, the terminology and operational concepts and tools is provided. Second, the structure of the dwarf green market solution to the environmental pollution problem is explained, its consequences highlighted, and the nature of its environmentally clean market transition friendliness is discussed. Third, the structure of the green market solution to the environmental pollution problem is shared, its consequences pointed out, and the nature of its environmentally clean market transition friendliness is pointed out. Fourth, the friendliness displayed by dwarf green markets and by green markets is contrasted in the same plane to show that one of them moves away from the goal of the environmental clean market transition. And finally, some food for thoughts and conclusions are underlined.

2.1. Terminology

EDM = Environmentally dirty market
EDTM = Environmentally dirty traditional market
EPO = Environmental pollution
DGM = Dwarf green market
GM = Green markets
EM = Environmental margin
REPO = Remaining environmental problem
REM = Remaining environmental margin
DEM = Dwarf environmental margin
ECLM = Environmentally clean market
EPO_M = Environmental pollution under management
I[EPO] = Environmental problem internalization
RETG = Renewable energy technology gap

2.2. Operational concepts and tools

- 1) **Environmentally dirty market**, one cleared by an environmentally distorted market price.
- 2) **Environmentally dirty traditional market**, the one cleared by an environmentally distorted traditional market price.
- 3) **Green market**, the one cleared by the green market price.
- 4) **Dwarf green market**, the one cleared by the dwarf green market price
- 5) **Green market price**, the one that reflects the environmental costs associated with economic activity.
- 6) **Dwarf green market price**, the one that reflects a portion of the environmental cost associated with economic activity.
- 7) **Environmental pollution management market**, one that addresses only a portion of the environmental pollution problem.

- 8) **Environmental pollution reduction market**, one that addresses fully the environmental pollution problem.
- 9) **Environmental margin**, one that reflects the environmental cost of production.
- 10) **Dwarf environmental margin**, one that reflects only a portion of the environmental cost of production.
- 11) **Environmental clean market**, one where the environmental margin is zero.
- 12) **Renewable energy technology gap**, the technology gap that needs to be closed to leave non-renewable energy markets behind, partially or fully.
- 13) **Environmental problem internalization**, the tool that corrects environmentally distorted markets.
- 14) **Environmental cost externalization**, the tools behind environmentally distorted market prices.
- 15) **Remaining environmental margin**, the difference between the environmental margin and dwarf environmental margin driving the remaining environmental problem.

2.3. The Dwarf Green Market Way to Addressing the Environmental Pollution Problem

i) The Setting up of Dwarf Green Markets

When dwarf green markets (DGM) are used to manage some of the environmental pollution problem (EPO) created by environmentally distorted traditional market prices (EDTM), we advance the situation shown in Figure 2 below:



Figure 2 The structure of the dwarf green market solution(DGM) to the environmental problems showing a remaining environmental pollution problem(REPO) issue delinking it from environmentally clean markets(ECLM)

We can highlight based on Figure 2 above that managing a portion of the environmental problem (EPO_M) created by environmentally dirty traditional markets (EDTM) leads to a remaining environmental problem (REPO), which keeps dwarf green markets (DGM) unconnected to clean markets as indicated by the broken arrow from REPO to ECLM.

ii) The Consequences of Operating under a Remaining Environmental Problem

The three market consequences associated with the coming of the remaining environmental problem (REPO) under dwarf green markets to address the pollution production problems of traditional markets (EDTM) are shown in Figure 3 below:

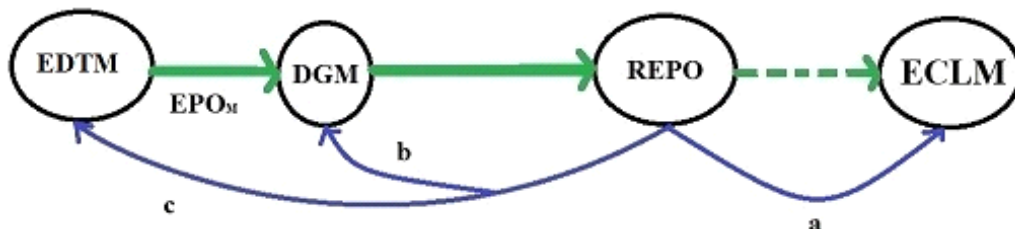


Figure 3 The consequences of setting up dwarf green markets(DGM)
The remaining environmental problem(REPO) means a) that a transition from dwarf green markets(DGM) to environmentally clean markets(ECLM) is not possible; b) that it affects the stability of the environmentally dirty market(EDM) and of the dwarf green market(DGM) as environmental pollution management takes place; and c) that there is no market circularity in the environmentally dirty market(EDM) and in the dwarf green market (DGM) as the cost of the remaining environmental pollution problem is still being externalized.

The information in Figure 3 above tells us the following things about the existence of the remaining environmental problem(REPO) after setting up dwarf green markets: 1) it prevents the movement of dwarf green markets(DGM) towards environmentally clean markets(ECLM) as arrow "a" from REPO to ECLM shows; 2) it affects the stability of remaining environmentally dirty traditional markets(EDTM) as arrow "c" from REPO to EDTM indicates; and 3) it affects the stability of dwarf green markets(DGM) as the arrow "b" from REPO to DGM demonstrates. Notice that going to dwarf green markets (DGM) is a move away from environmentally dirty traditional markets (EDTM), where permanent government intervention is needed for it to work properly.

iii) The type of environmental clean market transition friendliness displayed by dwarf green markets

The existence of the remaining environmental problem (REPO) shows that when dwarf green markets (DGM) are set up to address the problems created by environmentally dirty traditional markets (EDTM) we are creating a permanent environmental market failure that leads them away from the transition towards environmentally clean markets (ECLM), a situation summarized in Figure 4 below:

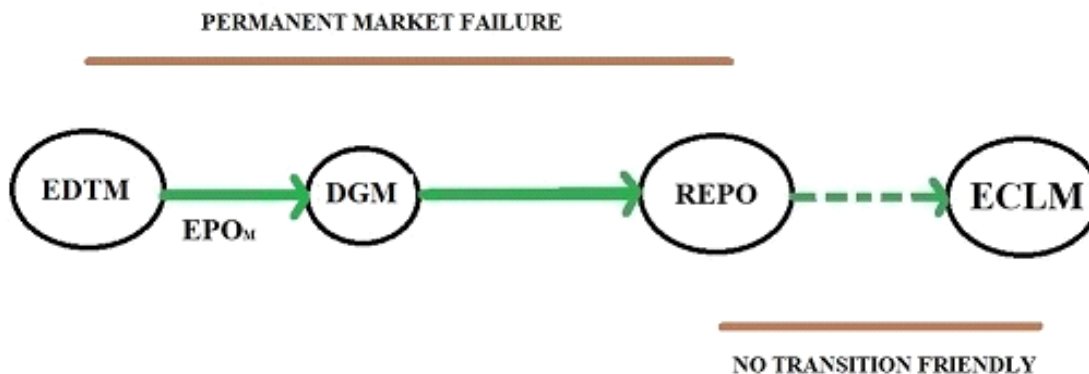


Figure 4 No transition friendliness under permanent environmental market failure

Figure 4 above tells us in simple terms that dwarf green markets (DGM) solutions are no environmental clean economy transition friendly as they create a remaining environmental pollution problem (REPO) because of a permanent environmental market failure, which keeps them away from environmentally clean markets (ECLM).

2.4. The Green Market Way to Addressing the Environmental Pollution Problem

i) The setting up of green markets

When green markets (GM) are used to address fully the environmental pollution problem (EPO) created by environmentally distorted traditional market prices (EDTM), we create the situation indicated in Figure 5 below:

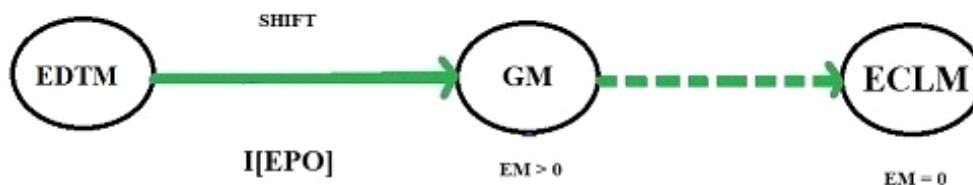


Figure 5 The structure of the green market solution(GM) to the environmental pollution problem: Internalizing the environmental pollution problem(I[EPO]) shift the environmentally dirty market(EDTM) to the green market(GM) in a way that allows for making environmental pollution reduction profitable to drive the environmental cost of pollution towards zero(EM→>0) and approach that way the environmentally clean market(ECLM) status.

We can tell based on Figure 5 above that internalizing the environmental pollution problem(I[EPO]) created by environmentally dirty traditional markets (EDTM) leaves no remaining environmental problem (REPO) out there, and this creates a transition path from green markets (GM) to environmentally clean markets (ECLM) as indicated by the broken arrow from GM to ECLM as it creates an environmental cost differential between those 2 types of markets, $EM > 0$ and $EM = 0$ respectively. Notice that the environmental margin(EM) under which green markets(GM) operates in Figure 5 above is positive($EM > 0$) as they run under pollution based non-renewable energy once in place; and environmentally clean markets have no environmental margin($EM = 0$) as they are no pollution production based markets, hence green markets make pollution reduction a profit making opportunity as the lower the environmental margin goes the lower the cost of production and consumption is; and therefore, the lowest the level of environmental pollution production created. Notice in Figure 5 above that the internalization of the environmental problem(I[EPO]) shifts the environmentally dirty traditional market (EDTM) towards the green market (GM), inducing the green margin differential needed to create the profit-making opportunity that will lead to the transition of green markets towards environmental pollution-less markets or environmentally clean markets.

ii) The consequences of operating under no remaining environmental problem

The two market consequences associated with the elimination of the remaining environmental pollution problem (REPO) under green markets (GM) are indicated in Figure 6 below:

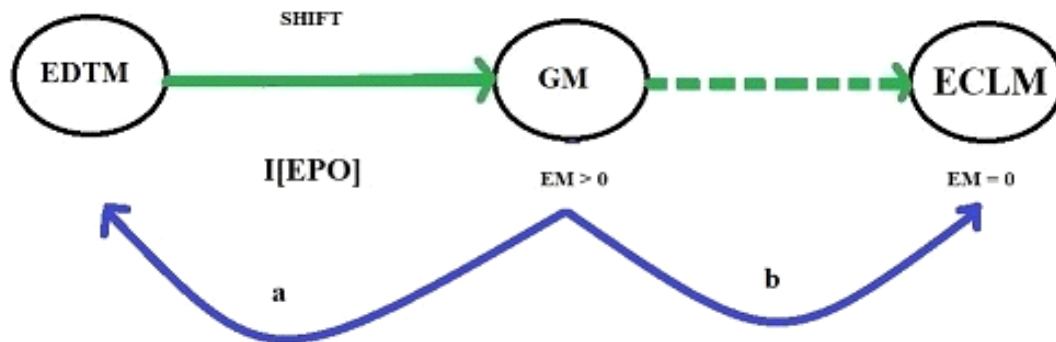


Figure 6 The consequences of setting up green markets(GM)

The information in Figure 6 above tells us the following about the elimination of the remaining environmental pollution problem(REPO) through full environmental problem internalization(I[EPO]): 1) it creates a path of movement from green markets(GM) towards environmentally clean markets(ECLM) as arrow "b" from GM to ECLM shows; and 2) it leaves the old environmentally dirty traditional market paradigm(EDTM) behind as its knowledge base is irrelevant under both green market thinking and under environmentally clean market thinking, new ideas or corrected old ideas are now needed to operate these markets efficiently. Notice that going green market (GM) is a move that leaves the knowledge base of the environmentally dirty traditional market (EDTM) behind as it does not work in the new market, just the move away from traditional market thinking the World Commission on Environment and Development called for in 1987 (World Commission on Environment and Development WCED, 1987) and which it said it was needed to leave pollution production behind.

iii) The type of environmental clean market transition friendliness displayed by green markets

The absence of the remaining environmental problem (REPO) tells us that when green markets are set up you are fully correcting distorted traditional market prices to eliminate the environmental market failure they create, which opens the path towards a profitable transition towards environmentally clean markets (ECLM), a situation stated in Figure 7 below:

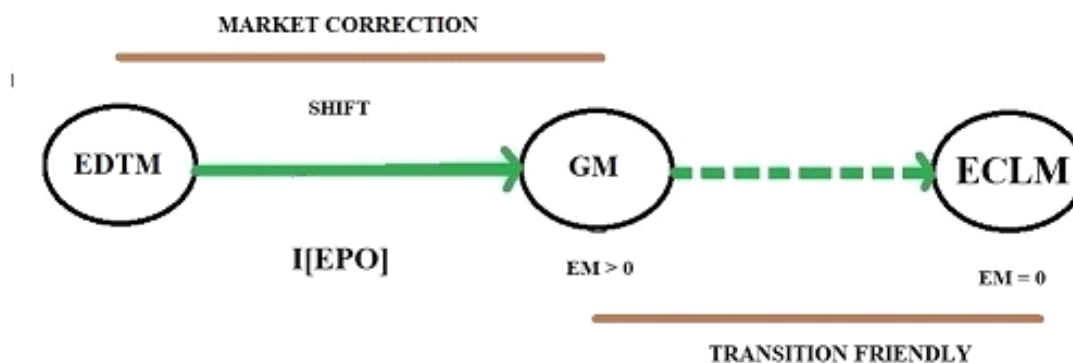


Figure 7 There is transition friendliness under market correction

Figure 7 above highlights in simple terms that green markets (GM) are environmental clean economy transition friendly as they create a profitable green margin reduction path that transitions green markets (GM) towards environmentally clean markets (ECLM), partially or fully, step by step.

2.5. The Transition from Green Markets to Environmentally Clean Markets

i) The structure of the transition

As reducing the environmental margin reflected in market prices is now a profit-making opportunity (GM ----> 0), then closing the renewable energy gap (RETG----> ∞) to leave the non-renewable energy economy behind is now too a good profit marking opportunity, and this create the structure of the transition from green markets (GM) to the environmentally clean market (ECLM) as described in Figure 8 below:

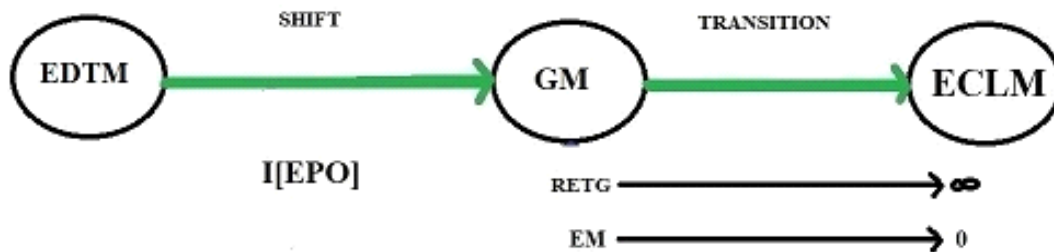


Figure 8 The structure of the transition from green markets(GM) to environmentally clean markets(ECLM)

Figure 8 above stresses that closing the renewable energy gap (RETG----> ∞) allows green markets (GM) to reduce their environmental margin (EM---->0) so as to produce and consume at the lowest green market price possible while producing the less pollution possible, until the environmental margin becomes zero (EM = 0), when it arrives at the world of perfect environmentally clean markets.

ii) The Partially Dominant Renewable Energy-based Market and Fully Dominant Renewable Energy-Based Green Market Transition Points.

The environmentally clean economy transition friendliness found in green markets (GM) can be seen as to be guided in steps first to a world under partial dominant renewable energy based green markets, and then to a world under full dominance renewable energy-based green markets, a situation depicted in Figure 9 below:

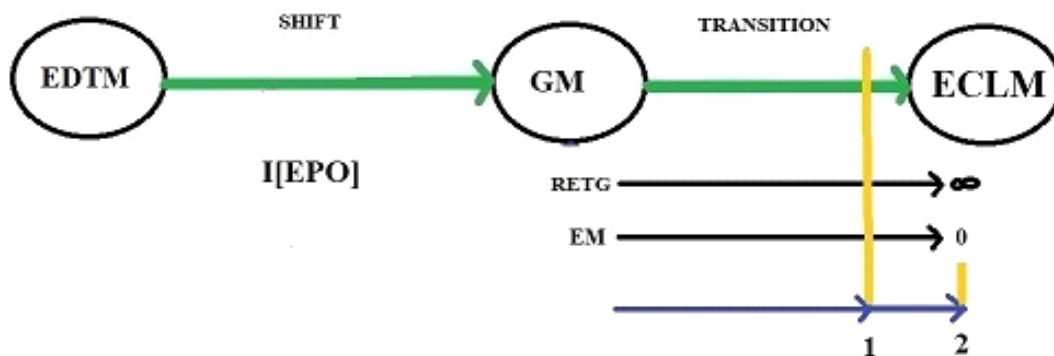


Figure 9 The points in the transition from green markets(GM) to environmentally clean markets(ECLM), where the green market(GM) becomes a partially dominant renewable energy based economy and fully dominant renewable energy based economy, at point 1 and point 2 respectively.

Figure 9 above shows the transition point where the green market (GM) reaches the partially dominant renewable energy-based market status at point "1"; and the transition point where the green market (GM) becomes a fully renewable energy dominant based market status at point "2". Notice that at point "2" the green market (GM) becomes an environmentally clean market (ECLM) as at point "2" we have EM = 0. The idea that closing the renewable energy technology gap (RETG----> ∞) is needed to transition to clean economies; and that failure to do that may even lead to economy blackouts has been recently pointed out (Munoz 2014).

2.6. Contrasting the Friendliness of Dwarf Green Markets and of Green Markets

We can contrast the structure of transition friendliness and model structure displayed by dwarf green markets (DGM) and by green markets (GM) by placing their structures in the same plane as detailed in Figure 10 below

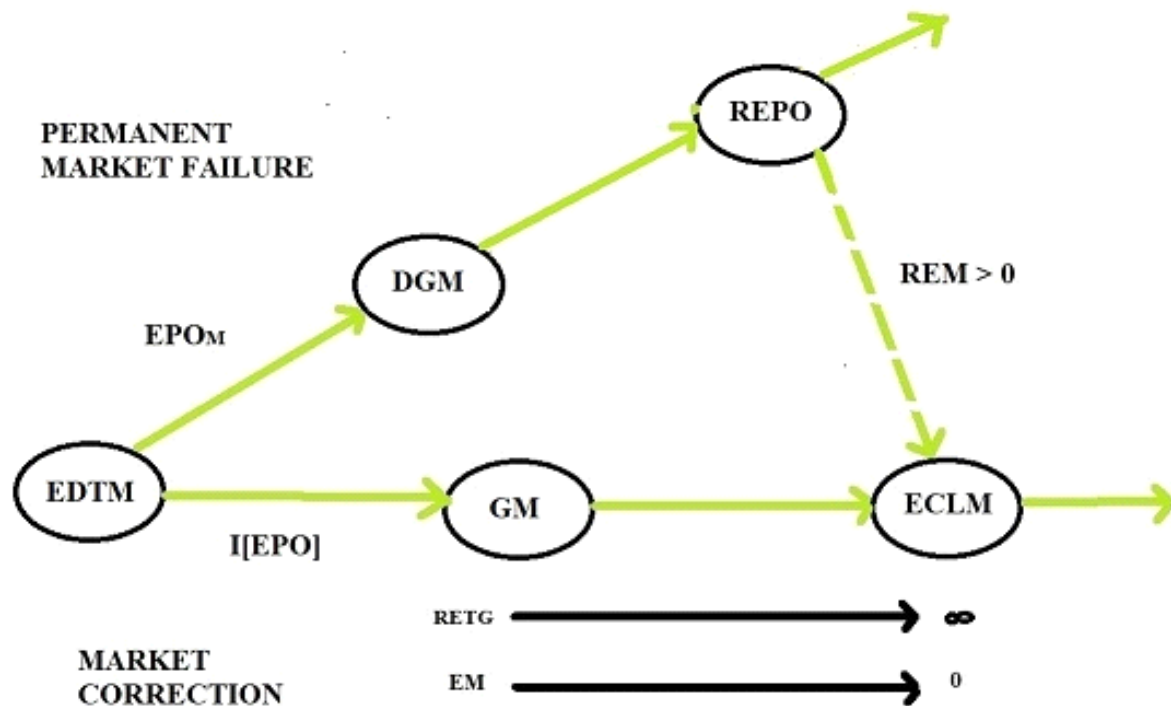


Figure 10 The environmental clean market(ECLM) transition friendly and transition unfriendly framework in terms of green markets(GM) and dwarf green markets

The following key aspects can be highlighted based on Figure 10 above: i) at the top we can see that dwarf green markets(DGM) work under a permanent environmental market failure that creates the remaining environmental problem(REPO), and which leads them away from the goal of environmental clean markets(ECLM) as indicated by the green arrow going away from environmentally clean markets(ECLM); ii) at the bottom we see a market correction that shift the environmentally dirty traditional market(EDTM) towards the green market(GM), which by means of closing the renewable energy gap (RETG----> ∞) to reduce the environmental margin moves towards the environmentally clean markets until they become one; iii) the further away the dwarf green markets(DGM) are from environmentally clean markets, the greater the remaining environmental margin(REM > 0); and iv) When environmentally clean markets(ECLM) come to exist, they will tend to expand at the lowest clean market price possible as indicated by the green arrow going from left to right from ECLM.

2.7. Food for Thoughts

i) Is environmental pollution reduction a profitable opportunity under dwarf green markets? I think No, what do you think? ii) Is investing in environmental pollution reduction technology a profitable opportunity under green markets? I think yes, what do you think? And iii) Can cost externalization theory be used to explain why dwarf green markets will tend to move away from the goal of environmentally clean markets once in place? I think yes, what do you think?

3. Conclusions

First, it was pointed out that dwarf green market solutions are partial solutions that lead to permanent environmental market failure, which prevents them from being environmentally clean economy transition friendly and which moves them away from the transition goal as environmental cost externalization is still taking place by means of the remaining environmental margin. Second, it was stressed that green market solutions are full solutions that lead to a distorted markets correction, which transform them into being environmentally clean economy transition friendly as pollution reduction now is a good profitable opportunity, the economic incentive that leads them towards environmentally clean economies. Third, it was indicated that the transition from green markets once in place can reach a point of partial renewable energy dominant green market, and fully renewable energy dominant green market, and when fully renewable energy dominant green market, then the green market becomes and behaves as an environmentally clean market. And finally, fourth, it was shown, graphically and analytically, that once in place we should expect dwarf green markets to move away from the goal of environmental clean market transition as the permanent environmental market failure under which they operate prevents environmental pollution reduction from becoming a good business opportunity for expanding production and consumption while expanding pollution reduction.

References

- Muñoz, L. (2023a). *Sustainability thought 162: Can we transition from the environmentally dirty economy to the environmental clean economy with the use of dwarf green markets?* CEBEM-REDESMA Boletín, Año 17, N° 2, La Paz, Bolivia.
- Muñoz, L. (2023b). Sustainability thought 179: Can we transition from the environmentally dirty economy to the environmental clean economy with the use of green markets? If Yes, why? *International Journal of Education Humanities and Social Science(IJEHSS)*, April-May 2023 India, 6(2): 115-31.
- Muñoz, L. (2024). *Sustainability thought 178: Environmental pollution management markets versus environmental pollution reduction markets: Which one is environmentally clean economy transition friendly? Why?* CEBEM-REDESMA Boletín, Año 18, N° 7, La Paz, Bolivia.
- Smith, A. (1776). *The wealth of nations*, W. Strahan and T. Cadell. London, UK.
- United Nations Conference on Sustainable Development UNCSD (2012a). *Rio+20 Concludes with Big Package of Commitments for Action and Agreement by World Leaders on Path for a Sustainable Future, Press Release, June 20-22*. New York, NY, USA.
- United Nations Conference on Sustainable Development UNCSD (2012b). *The future we want, june 20-22*. New York, NY, USA.
- World Commission on Environment and Development WCED (1987). *Our common future*. Oxford University Press, London, UK.