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Abstract

A global monopoly supplier country of necessary inputs for the provision of global public goods has an incentive to subsidize these exports. The strategic interdependence in the global public good context reverses the ”large country” incentives to manipulate the terms-of-trade. It is optimal for a monopoly supplier country to deliberately worsen its terms of trade. The existence of a global monopoly supplier increases global public good supply relative to a competitive setting. Import-dependent countries may also benefit from a monopoly supplier. While they are strategically exploited to increase their contributions to the global public good, they do so at lower costs, and they benefit from increased contributions by the other importer countries.

JEL-Codes: H410, D600, Q540.

Keywords: global public goods, market power, climate policy, terms-of-trade, Inflation Reduction Act, Net Zero Industry Act.

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1 Introduction

The last two decades have seen an increased concentration of the production of goods which are pivotal for a transition to a carbon-free economy in a single country, China. According to the International Energy Agency, China's share in the world's manufacturing capacity in polysilicons amounted to 79.4%, in solar cells to 85.1%, in solar modules to %74.7, and to 96.8% in wafers in 2021 (IEA, 2022). Similarly, China's production capacity of lithium-ion batteries amounted to 75% of the global capacity in 2022, and it was responsible for 90% of anode and electrolyte production (BNEF, 2022). Moreover, it also posseses 60% of global wind turbine manufacturing capacity in 2023 (GWEC, 2023). Other countries are increasingly worried about their green product import dependency and fear that China could exploit its market power to their detriment, and that this could also slow down the global fight against climate change. In the shadow of such potential threats, the United States have, with the Inflation Reduction Act, introduced large scale subsidies to reshore the production of such emission-reducing products. Similary, the European Union is discussing its rules on state aid to enable similar subsidies. The recently revealed draft of the European Union's Net-Zero Industry Act aims to increase the share of domestically produced green tech to 40% of the own climate and energy targets.

In the context of these ongoing policy debates, I argue that the case for industrial policy for green goods may actually be substantially weaker than for non-green products. Green goods, such as photovoltaics, batteries, or wind turbines, exhibit important characterics which question whether arguments based on the classic optimum tariff approach are valid in this context. Emission-reducing goods are necessary inputs for individual countries to decrease their greenhouse gas (GHG) emissions. The reductions by each country constitute private contributions to the global public good of GHG emission reduction. As my analysis shows, the public good nature of these goods fundamentally alters the strategic incentives of a monopoly supplier country with surprising consequences for its optimal policy. Intuitively, the monopoly supplier country has a vital interest to export these goods such that they will be used by the importing countries to provide the global public good. This is not the case for goods which do not possess these public good characteristics. As a consequence, importer countries' fears of being exploited by high prices set by the monopoly supplier are unsubstantiated for such emission-reducing goods.

My study uses a standard private provision framework to analyze the optimal policy of a monopoly supplier country of emission-reducing goods, where the equilibrium repercussions of such unilateral strategic actions are explicitly taken into account. It is shown that the monopoly supplier country has no incentive to tax its exports in order to increase the relative price of its green export good in the world market. The optimum tariff result, a cornerstone of international trade theory, does not apply in the context of global public goods. Surprising at first sight, it is optimal for the monopoly supplier to subsidize the exports of emission-reducing goods. However, my findings are rather intuitive in the light of extant results in the literature on the private provision of public goods. The loss in tax revenue from the export subsidy results in a transfer from the monopoly supplier country to the importer countries. As shown by Warr (1983), such a transfer does not effect the equilibrium outcome in an interior private provision equilibrium, i.e., public and private good consumption by all parties remain unchanged, and the transfer does not make any country better or worse-off. The implicit transfer is therefore cost-free for the monopoly supplier country. At the same time, reduced prices for emission-reducing goods in the world market trigger higher emission-reducing efforts by all importer countries, which increases total emission reductions. This makes the monopoly supplier better-off. The importers' reactions to the export subsidies are also in line with the established finding that a reduction of a given country's marginal costs of contributing benefits all other countries, cf. Cornes and Hartley (2007). Thus, the optimal export subsidy policy combines an income transfer, which is neutralized via the equilibrium adjustments, with a price reduction for emission-reducing products in the importing countries.

My analysis also finds that importer countries can be better off with a monopoly supplier relative to a competitive setting. The private provision literature has established that an individual country may benefit or lose from an exogenous reduction of its contribution costs. It benefits from higher provision levels, but it is strategically exploited since it increases its own contributions, cf. Cornes and Hartley (2007). In my monopoly supplier setting, each importer country additionally benefits from the increased provision by the other importers. This makes an overall positive effect of a monopoly supplier on importers more likely.

Conceptually, my framework builds on the standard private provision model, see Bergstrom et al. (1986) for the seminal set-up and Buchholz and Sandler (2021) for

its application to global public goods. My study introduces a monopoly supplier country, which connects global public goods to international trade. Copeland and Taylor (2022) survey the literature on trade and the environment, including the role of market power. In a seminal contribution, Markusen (1975) argued, in a setting without strategic interaction, that an importer country with market power should tax its imports beyond the optimum tariff level to reduce existing negative cross-border externalities. My analysis shows that, in the global public goods case with strategic interaction, redistribution invariance renders the optimum tariff effect irrelevant and only the cross-border internalization incentive remains, which, in combination, reverses the optimum tariff result for a monopoly exporter.

My study also adds to the literature on transfers of resources or technology between countries in global public goods contexts, see Buchholz and Konrad (1994, 1995), Ihori (1996), Buchholz et al. (2015), and Elsayyad and Morath (2016), which also has important implications for climate treaties, see Barrett (2006) and Harstad et al. (2019), among others. In my study the optimal policy of a monopoly supplier country manipulates the importers' relative costs of public good provision, and this endogenously generates a transfer to, and lower contribution costs for, the importing countries, whereas existing studies have stressed explicit transfers of resources or technology between countries with existing differences in productivity or income.

Finally, Andres (2023) studies a two-country, two-period strategic model of trade in a clean technology with differential country-level production costs, learning-by doing and imperfect competition. She focusses on dynamic aspects of the trade regime and technology diffusion, and argues that international trade agreements are most likely to be beneficial if clean production subsidies are permitted. In line with much of the industrial organization and the strategic trade policy literature, she uses a quasi-linear preference specification, which effectively shuts down the strategic mechanism which is at the heart of my approach. Thus, her analysis may be regarded as complementary to mine.

2 The framework

There are $n+1$ countries $i = 0, 1, ..., n$. Countries have preferences $u^i(x_i, G)$, where x_i is private consumption and G are total emission reductions which constitute a global public good. Both goods are assumed to be strictly normal. The total

emission reductions are the sum of the emission reductions by individual countries g_i, i.e., $G = \sum_{i=0}^{n} g_i$. Countries are endowed with an exogenous income m_i.

My analysis departs from the usual assumption that countries possess a given local, potentially different, technology to reduce emissions. Instead, I make two key assumptions that determine the structure and the results in my model. First, emission reductions require the purchase of a particular good. The purchase of one unit of this good generates one unit of g_i. The second key assumption is the determination of the price at which this emission-reducing good is available to individual countries in the world market. Country 0, called the monoply supplier, is assumed to be the only producer of this good, possibly due to a leadership in technology or lower costs. The good is produced in a competitive industry, and the marginal cost of producing the good is constant and equal to c. All other countries $j, j = 1, ...n$ rely on imports from the monopoly supplier country to engage in emission reductions and are price-takers.[1] Because of this dependency, the monopoly supplier can effectively determine the price of emission reductions in all other countries p_j. This may be implemented by setting an appropriate tax or subsidy on the exports of the emission-reducing good. The price p_j is uniform across importer countries reflecting the fact that price discrimination will be difficult to establish given potential resale.[2] The monopoly supplier first chooses the world market price p_j for emission-reducing goods, and then all countries simultaneously choose their contributions to the global public good. Finally, the private good x is internationally homogenous with its price normalized to one, and the international trade balance automatically adjusts.

Taking into account their respective constraints for given prices, the countries $i = 0, ...n$ solve the standard private provision problems,

$$\max_{x_i, G} u^i (x_i, G)$$

[1]While there may be a domestic alternative technology in each importer country, i.e., more expensive or less advanced solar panels etc., the domestic alternative is assumed to be irrelevant due to its substantial cost-efficiency disadvantage.

[2]The government of country 0 may also manipulate its domestic price p_0. However, the relevant marginal cost for the monopoly supplier are always the marginal cost c, so that the monopoly supplier's optimization problem, the equilibrium outcome and the monopoly supplier's optimal policy are independent of the domestic price.

$$\text{s.t. } x_i + p_i G \leq m_i + p_i G_{-i}, \text{for } i = j, \tag{1}$$

$$x_i + cG \leq m_i + \Pi_0 + cG_{-i}, \text{for } i = 0, \tag{2}$$

$$G - G_{-i} \geq 0, \text{for all } i,$$

$$x_i \geq 0, \text{for all } i$$

where $G_{-i} = \sum_{k=0,k\neq i}^{n} g_k$ is the total emission reduction by all other countries, and $\Pi_0 \equiv (p_j - c) G_{-0}$ is the additional rent of the monopoly supplier country. The budget constraint of the monopoly supplier (2) differs from those of the importers (1), since this country additionally receives revenues from export taxes, and the relevant contribution prices are c and p_j, respectively. The solutions to these problems implicitly yield the best responses and characterize the Nash equilibrium.

My further analysis relies on an aggregative game approach, see Cornes and Hartley (2007) and Buchholz and Sandler (2021). This allows straightforward investigation of the equilibrium repercussions of changes in the world market price of emission-reducing goods. For an importer the price of one unit of g is p_j. Thus, $x_j = m_j - p_j g_j$, so that $g_j = \frac{1}{p_j}(m_j - x_j) = a_j (m_j - x_j)$, with $a_j \equiv 1/p_j$. Denoting by $a_0 \equiv 1/c$ the monopoly supplier's productivity, and assuming symmetric importers in terms of preferences and incomes, the aggregate budget constraint implies for the public good quantity

$$G = ng_j + g_0 = na_j (m_j - x_j) + a_0 (m_0 + \Pi_0 - x_0). \tag{3}$$

Since $a_0 \Pi_0 = a_0 (p_j - c) G_{-0} = na_0 (m_j - x_j) - na_j (m_j - x_j)$, this simplifies to

$$G = na_0 (m_j - x_j) + a_0 (m_0 - x_0). \tag{4}$$

Note that the price p_j only enters (4) indirectly, which reflects the transfer nature of prices which deviate from marginal costs.

For positive equilibrium contributions, on each country's income expansion path in $x_i - G$ space, which is denoted $e^i(G, a_i)$, the marginal rate of substitution between the private and the public good is equal to the price ratio, i.e., $\frac{u^i_{x_i}}{u^i_G} = a_i$, where u^i_x and u^i_G are the partial derivatives of utility with respect to private and public good consumption, respectively. This path maps the public good quantity into private consumption, $x_i = e^i(G, a_i)$. Due to non-inferiority of both goods the expansion paths are strictly increasing in G, and I assume that $e^i(0, a_i) = 0$.

At a Nash equilibrium $(x_0, ..., x_n, G)$, in which all countries contribute, all countries i will be on their respective expansion paths $e^i(G, a_i)$. Without loss of gener-

ality, I normalize the marginal cost $c = 1$, so that $a_0 = 1$. The aggregate constraint (4) can then be turned into the interior equilibrium condition

$$G = n\left[m_j - e^j\left(G, a_j\right)\right] + \left[m_0 - e^0\left(G, 1\right)\right]. \tag{5}$$

Differentiating yields $G'\left(a_j\right) = -n\left[e^j_G G'\left(a_j\right) + e^j_{a_j}\right] - e^0_G G'\left(a_j\right)$, where $e^i_l, l = G, a_j$, denotes the partial derivative with respect to the respective subscript, which can be solved as

$$G'\left(a_j\right) = \frac{-n e^j_{a_j}}{1 + n e^j_G + e^0_G} > 0. \tag{6}$$

The sign follows from the positive slope of the expansion paths, so that $e^j_G > 0$ and $e^0_G > 0$, and from the fact that normality implies $e^j_{a_j} < 0$, i.e., a decrease in the price of the emission-reducing good, which increases a_j, reduces the consumption of the private good. I state this as my first proposition.

Proposition 1 *At an interior Nash equilibrium a decrease in the price charged by the monopoly supplier leads to an increase in global public good provision.*

A reduction in the monopoly supplier's price has two effects. First, it generates an income transfer from the monopoly supplier to the importer countries. Warr (1983) demonstrated that at an interior equilibrium such a transfer does not change the quantity of the public good and does not affect the utility of the parties involved. Second, the price reduction makes contributions to the public good less expensive for all importer countries. This unambiguously raises their contributions so that the total quantity of the public good is increased, as shown for an exogenous cost reduction of an individual contributer by Cornes and Hartley (2007).

Consider now what happens to the utility of the monopoly supplier country as it manipulates the price of the emission-reducing good p_j. The equilibrium utility achieved by the monopoly supplier is $u^{0^*} = u^0\left(e^0\left(G\left(a_j\right), 1\right), G\left(a_j\right)\right)$, so that

$$\frac{\partial u^{0^*}}{\partial a_j} = u^0_x e^0_G G'\left(a_j\right) + u^0_G G'\left(a_j\right) = G'\left(a_j\right)\left[u^0_x e^0_G + u^0_G\right] > 0. \tag{7}$$

This is my next result.

Proposition 2 *The utility of the monopoly supplier in an interior equilibrium is decreasing in the price charged by the monopoly supplier. The optimal policy of the monopoly supplier is to subsidize its exports of emission-reducing goods.*

The intuition is again straightforward and relates to the two effects of changing the price of the emission-reducing good. While a reduction in the price leads to an income transfer from the monopoly supplier to the importer countries, this does not hurt the monopoly supplier. The income transfer will be offset one-to-one by a reduction in the contribution by the monopoly supplier country, which will be fully compensated by increased contributions by the importers receiving the transfer. Thus, this income transfer is fully neutral. Intuitively, the transfer reduces the monopoly supplier's resources to contribute to the global public good and expands those of the importers, which decreases the contributions by the former and increases those by the latter. Moreover, the price reduction boosts the equilibrium quantity of the public good, which benefits the supplier country. The increase is driven by higher contributions by the importers in response to the subsidized price.

Proposition 2 implies that the monopoly supplier has an incentive to subsidize the emission-reducing good to reduce prices below marginal costs. In sharp contrast to a monopoly situation in markets for private goods, where the monopoly supplier country has an incentive to tax exports and to reduce supply in order to improve its terms of trade, here, the monopoly supplier has an incentive to reduce prices. This country will deliberately worsen its terms of trade. The result goes beyond Markusen (1975) who first argued that countries with market power can use a tariff to address cross-border externalities. According to his analysis, countries should combine the optimum tariff considerations and the cross-border internalization aspects. Proposition 2 shows that, with strategic interaction, the optimum tariff concerns become irrelevant, and that export subsidies are unambiguously optimal in an interior equilibrium with positive cross-border externalities.

The effects of the export subsidy on global public goods provision and on the welfare of the monopoly supplier are reminiscent to the literature on technology transfers in private provision situations, i.e., the fact that it may be advantageous to improve other countries' technological capabilities. It also relates to the benefits of transferring resources to countries with superior emission-reducing technology, see Buchholz and Konrad (1995) and Ihori (1996), among others. Here, however, the transfer and the lower contribution costs arise endogenously from the market power and the corresponding optimal self-interested policy of the monopoly supplier.

The results of Propositions 1 and 2 hold in any interior equilibrium, so that it is evident that the monopoly supplier country will at least subsidize its exports,

and reduce the own contributions concomitantly, up to the point where it seizes to contribute. While it is likely that the corresponding export price defines the optimal policy, it may be optimal to reduce the import prices for the importing countries even further. In a corner equilibrium, in which all importers contribute, but the monopoly supplier does not[3], the effect of increasing the productivity paramter a_j, i.e., a further reduction in import prices p_j, is

$$\frac{\partial u^{0^*}}{\partial a_j} = u_x^0 \left[-\frac{G}{a_j^2} + (p_j - c) G'(a_j) \right] + u_G^0 G'(a_j). \tag{8}$$

It is directly evident from the comparison of (8) to (7) that, once the monopoly supplier country seizes to contribute to the global public good itself, its incentives to reduce the price are strongly diminished. While there still is a positive effect from the increase in public good provision, given by the last term in (8), there are two additional negative effects. First, the subsidy is no longer costless, and affects all infra-marginal units, i.e., the total level of G, given the country's monopoly position. Moreover, also the expansion of total public goods provision is costly to the extent that $p_j < c$, which is a consequence of the export subsidy. In a corner solution, the monopoly supplier country cannot compensate the transfer implicit in an increased subsidy by further reductions of its own contributions. Thus, while increasing the subsidy continues to generate higher contributions by the importers, this subsidy suddenly becomes rather costly. I summarize this as my next result.

Proposition 3 *The optimal policy of the monopoly supplier country subsidizes the emission-reducing good at least up to the point where it seizes to contribute to the public good itself.*

Consider now the utility of an importer country at an interior equilibrium. It is well-known that an exogenous cost-reduction for an individual country may benefit or hurt it, given that such a country benefits from the lower costs, but is strategically exploited, see Cornes and Hartley (2007). Here, at least for $n > 1$, the situation is different, given that all importer countries face the lower price. This strengthens the possibility that importer countries benefit from the higher contribu-

[3]In such an equilibrium the monopoly supplier's utilty is $u^{0^*} = u^0(m_0 + (p_j - c)G, G)$, the total quantity of the public good is $G = na_j\left(m_j - e^j(a_j, G)\right)$, the comparative static effect, analogous to (6), is $G' = \frac{n\left[\left(m_j - e^j\right) - a_j e_{a_j}\right]}{1 + na_j e_G^j} > 0$, and $u_x^0 > u_G^0$.

tions by the other importer countries.[4] Consider the utility of an importer country $u^{j^*} = u^j\left(e^j\left(G\left(a_j\right), a_j\right), G\left(a_j\right)\right)$, and its reaction to a price change

$$\frac{\partial u^{j^*}}{\partial a_j} = u_x^j\left[e_{a_j}^j + e_G^j G'\left(a_j\right)\right] + u_G^j G'\left(a_j\right). \tag{9}$$

The sign of this expression is ambiguous. The last term is the direct effect of the public good increase. By Proposition 1, this term is positive. The first term, however, consists of two elements, which work in opposite directions. The first element is the response to relative prices. An increase in a_j corresponds to a decrease in p_j which triggers higher contributions g_j and lower private consumption x_j. This element is negative and corresponds to the strategic exploitation effect. The second element is the private consumption response due to the income effect of the public good increase. This is positive. Thus, the combined first term is undetermined, so that the total effect is undecided. However, using (6), and exploiting the fact that in an interior equilibrium $a_i = u_x^i/u_G^i$ for all i, allows to write

$$\frac{\partial u^{j^*}}{\partial a_j} = \frac{u_x^j e_{a_j}^j\left[1 + e_G^0 - \frac{n}{a_j}\right]}{1 + n e_G^j + e_G^0}. \tag{10}$$

Evaluating this at $a_j = a_0 = 1$, yields the next result.

Proposition 4 *An importer country will benefit from a marginal export subsidy if* $n > 1 + e_G^0$.

This shows that, for given $n > 1$, importer countries will benefit from a marginal export subsidy if private consumption of the monopoly supplier does not react too strongly to the public good increase triggered by the marginal export subsidy. In this case, the negative exploitation effect is insufficient to outweigh the benefits of higher public good provision. Each importer enjoys a direct positive effect and a positive income effect from the increased contributions by the other importers in response to the lower price. The importance of the slope of the income expansion path of the monopoly supplier is also intuitive, given its role for the reaction of total public goods supply to the export subsidy. The larger its magnitude, the smaller the increase. This increase in public goods generates the possibility that all countries, including the importers, are made better-off.

[4]Intuitively, if the contributions by the $n-1$ other importers under the subsidized price exceed the contributions of the n other countries (including country 0) for $p_j = c$, the new budget set with the subsidized prices strictly dominates the original budget set, since G_{-j} is larger and the price of G is lower. This is sufficient for the importer countries to be better-off.

3 Extensions and robustness

The key results on the optimal policy of the monopoly supplier country and its effect on global public good provision do not depend on the simplifying assumptions made. To see this, consider some potential modifications.

Asymmetric importer countries. Heterogeneity in terms of incomes and preferences does not change the key results of Propositions (1)-(3), since, in this case, the condition for an interior equilibrium corresponding to (5) reads

$$G = a_0 \left[m_0 - e^0 \left(G, a_0 \right) \right] + a_0 \sum_{j=1}^{n} \left[m_j - e^j \left(G, a_j \right) \right], \tag{11}$$

and the effect of a price reduction corresponding to (6) is

$$G' \left(a_j \right) = \frac{- \sum_{j=1}^{n} e_{a_j}^j}{1 + e_G^0 + \sum_{j=1}^{n} e_G^j} > 0, \tag{12}$$

where I again set $a_0 = 1$. The importers' responses to lower prices differ quantitatively, but not qualitatively, so that public good provision still increases, and, as a consequence, subsidizing exports remains optimal for the monopoly supplier.

Non-contributing countries. The results are robust to the inclusion of non-contributing countries. Redistribution neutrality will typically break down if the redistribution involves non-contributing countries, see Bergstrom et al. (1986). However, export subsidies on emission-reducing goods imply that the transfer only accrues to contributing countries. Non-contributors do not benefit from lower prices, so that redistribution invariance is preserved. If lower prices additionally turn some non-contributors into contributors, this further increases public good provision.[5]

Local conditions. My analysis assumed that one unit of the emission-reducing good translated one-to-one into contributions to the global public good for all countries alike. However, the contribution costs may additionally depend on local conditions, such as the local climate or the level of economic development. Assume that for each country i, one unit of the emission-reducing good generates b_i, $b_i > 0$, units of the public good, so that for an importer the effective price of one unit of g is p_j / b_j. Thus, $x_j = m_j - p_j g_j / b_j$, and $g_j = \frac{b_j}{p_j} \left(m_j - x_j \right) = a_j b_j \left(m_j - x_j \right)$. The income expansion paths may now be defined as $e^i = e^i \left(G, z_i \right)$, with $z_i \equiv a_i b_i$.

[5]Similarly, a price increase which turns importers into non-contributors, and thus into non-importers, precludes the possibility that the monopoly supplier could benefit from further raising the price, which confirms that an export subsidy is the optimal policy.

Assuming symmetry among the importers in terms of preferences, incomes, and local conditions, i.e., b_j is the same for all j, and normalizing $b_0 = 1$, Equation (6) becomes

$$G'(a_j) = \frac{-n\left[(1 - a_j(1 - b_j))\, b_j e^j_{z_j} + (1 - b_j)(m_j - e^j(G, z_j))\right]}{1 + n[1 - a_j(1 - b_j)]\, e^j_G + e^0_G}. \tag{13}$$

For $b_j > b_0 = 1$, i.e., in the case where the importer countries are more effective at turning the imported emission-reducing good into contributions, the level of public goods in an interior equilibrium still increases in response to a price reduction ($G'(a_j) > 0$), so that Propositions (1)-(3) also hold. For $b_j < b_0 = 1$, i.e., in the case where the importer countries are less effective, the level of public goods will only increase in response to a price reduction if the productivity differences are not too pronounced, and Propositions (1)-(3) will then continue to hold. However, if local conditions make it substantially more challenging for importers to turn the emission-reducing good into contributions to the global public good, this will no longer be the case.

Impure public goods. The baseline private provision model has been extended to allow for private utility components, as in the analysis of green markets by Kotchen (2006) or in the "warm glow" formulation by Andreoni (1990). As shown by the latter author, if the private utility component is equally important for all contributors, redistribution neutrality in an interior equilibrium will still hold. This implies that, also in such a setting, the monopoly supplier country has an incentive to subsidize the export of emission-reducing goods. Moreover, given that the importer countries enjoy private benefits from their own contributions, their utility is further increased by higher contributions in response to lower prices. Finally, with a private utility component, the monopoly supplier country's optimal policy will typically not reduce the own contributions to zero.

4 Conclusion

The incentives of a monopoly supplier of emission-reducing products to subsidize its exports call into question the optimum tariff argument for public subsidies by current importer countries to reshore production of such products. Even if the monopoly supplier country's scope for expanding the level of global public goods via subsidized export prices is limited by a rather low level of its own contributions

in the competitive benchmark, the monopoly supplier will always have an incentive to worsen its terms of trade at the margin. Importers must not be afraid of being exploited by high prices, since a monopoly exporter does neither benefit nor lose from the redistribution caused by a change in the terms of trade, but has a genuine interest that these products are used by the importers. For these green products, the concept of strategic autonomy, often put forward to justify large scale policy interventions, does not appear to be very meaningful given their nature of being key inputs to the provision of a global public good. Arguments for governments' industrial policy interventions depend fundamentally on a distinction between products, which are directly used to provide global public goods, such as the reduction of GHG emissions, and other products, which do not exhibit such characteristics.

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