

Trade Remedies in Renewable Energy: A Global Survey

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UNCTAD
Ad hoc Expert Group Meeting on Trade remedies in Green Sectors
Geneva, 3 - 4 April 2014

Takeaways from the literature

- Basic economic analysis treats trade remedies similar to tariffs, with well-known effects.
- Direct effect of AD/CVD measures is to reduce imports by raising their price.
- Trade remedies can lead to trade diversion both on bilateral imports directly and through spillover channels.
- “Strategic dumping” sometimes promotes collusion between firms and may achieve economies of scale.
- Retaliatory motives may prompt complaints against countries that instigated petitions in past investigations.
- Takeaway: Motive of trade remedies no longer simply about correcting for “unfair” trade practices, but about broad protection of domestic firms.

Concerns regarding trade remedies targeting renewable energy (RE)



1. Higher prices for green products will lead to less accessibility for user industries and consumers;
2. Higher price of renewable electricity could erode competitiveness with fossil fuels to the detriment of the environment;
3. Raised costs of intermediate inputs will affect downstream firms in the supply chain, thereby undermining “supply chain optimization”;
4. Retaliatory behavior will increase among targeted countries.

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Survey of trade remedies in RE sector



- **Global survey:** identified AD and CVD cases in the RE sector from 2008 through early 2014, based on data from (1) Temporary Trade Barriers database created by Chad Bown at the World Bank and (2) official government sources.
- **Identification:** AD/CVD cases specify disaggregated codes at the 8- or 10-digit HTS product level, which as a rule can be readily identified as RE products. WTO and APEC lists of EGs guided product identification.
- **Recorded 41 cases:** 26 anti-dumping cases and 15 parallel subsidy investigations. Cases targeting multiple countries but the same products are counted separately.
- **Six countries pursued renewable investigations:** Australia, China, the European Union, India, Peru, and the United States.
 - EU initiated the greatest number of AD/CVD cases, namely 18 cases, or two-fifths of the renewable cases identified.
 - US and China accounted for 8 and 5 of the cases initiated, respectively.
- **Products targeted:** 16 cases involved biofuels; 18 cases involved solar energy products; and 7 cases involved wind energy products.

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Countries that impose trade remedies targeting renewable energy products



Country	GDP, 2012 (US\$ billions)	Renewable electricity net generation, 2012 (TWh) ^a	AD cases		CVD cases		Total imports affected for 41 cases in renewables (US\$ millions) ^c
			Cases targeting RE since 2008	Total cases (2008-12) ^b	Cases targeting RE since 2008	Total cases (2008-12) ^b	
Australia	1,532	29	3	49	1	7	456
China	8,227	797	3	53	2	6	2,144
EU	16,687	684	10	75	8	21	24,408
India	1,842	162	4	167	0	0	502
Peru	204	22	1	10	1	7	40
US	16,245	508	5	68	3	44	4,414
Total	n.a.	n.a.	26	422	15	85	31,965

n.a. = not applicable; TWh = terawatt hours; RE = renewable energy

^a Data for China and India from 2011; EU data from 2010; all other data from 2012.

^b The total number of AD and CVD cases is through year-end 2012.

^c Calculated as average imports from 2009 through year measure imposed; trade based on HTS codes identified in AD/CVD case.

Sources: World Bank, WDI Database; US Energy Information Administration; AD/CVD cases from Bown (2012a) and (2012b); total imports affected from authors' calculations.

Estimated trade reduced from AD/CVD cases



- The simple average of dumping and subsidy *ad valorem* duties is 27% and 26%, respectively. For cases with parallel AD/CVD investigations, the total combined penalties averaged 59%.
- For cases with specific duties (e.g., based on weight or volume) we use the calculated dumping/subsidy margins or estimate AV equivalents.
- Importantly, AD/CVD duties are levied on top of existing duties; this is important for biofuels, but less for solar and wind, which generally have low applied tariffs.
- To estimate the reduction of trade in RE products, we assume an elasticity of import demand of -1.0 (i.e., a 1% increase in price of the good results in a 1% decrease in the quantity imported).
- Based on this assumption, we broadly estimate the total reduction of trade to be about **\$14 billion annually**.
- As AD and CVD penalties are effective for 5 years (pending sunset review), this translates to global trade loss of **\$68 billion over 5 years**.

Estimated RE trade reduced by country

Complainant country	Value of imports from respondent country (US\$ millions)											Total trade
	ARG	CAN	CHN	EU	INDO	KOR	MYS	SGP	TWN	US	VTN	
Australia	0	0	70	0	0	2	0	0	0	9	0	80
China	0	0	0	406	0	83	0	0	0	464	0	953
European Union	347	441	4,427	0	164	0	0	0	0	2,626	0	8,004
India	0	0	66	0	0	0	19	0	25	21	0	132
Peru	0	0	0	0	0	0	0	0	0	19	0	19
United States	0	0	4,128	0	0	0	0	0	222	0	46	4,396
Total trade	347	441	8,692	406	164	85	19	0	246	3,138	46	13,584

Note: All initiated AD/CVD cases are included regardless of the outcome, i.e., whether ruled affirmative, negative, or withdrawn.

Source: Authors' calculations.

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Products targeted in AD/CVD investigations

Renewable energy product	Number of AD/CVD cases	Total trade affected		Estimated trade reduced		Global trade in targeted renewable energy products (US\$ billions) ^a
		Value (US\$ millions)	% of total global trade	Value (US\$ millions)	% of total global trade	
Biofuels	16	9,404	3.6	3,605	1.4	259
Solar energy						
cSi PV cells & modules	11	19,230	21.7	8,549	9.6	89
Solar grade polysilicon	5	2,144	29.5	953	12.0	7
Solar glass	2	146	6.8	61	2.8	2
Wind energy						
Glass fiber products	2	238	3.2	24	0.3	7
Wind turbines	5	804	8.3	393	4.1	10
Total	41	31,965	8.5	13,584	3.6	374

^a Total global trade estimated based on the 6-digit HS codes that correspond to the HTS codes specified in each AD/CVD case. Global trade is calculated as the average imports of specified products in recent years, 2009 to 2012. Because 6-digit HS codes include some unrelated products this is an imprecise overestimate of actual global trade in the specified renewable energy products. For some cases, identification of which 6-digit HS codes to draw on from the AD/CVD cases relied on authors' judgment.

Sources: Trade affected and trade reduced authors' calculations; global trade from World Bank WITS database and authors' calculations.

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WTO cases targeting RE



- The number of AD/CVD cases far outnumbers the handful of disputes that have arrived at the WTO.
- Trade remedies “offer a much faster, direct, and politically popular means of response to unfair industrial policies compared to WTO disputes” (Wu and Salzman 2013).
- But nearly a dozen WTO dispute cases have been pursued since 2010; concentrated in countries at the helm of AD/CVD cases, including Argentina, China, EU, India, and the US.
- Two disputes directly relate to the proceedings of trade remedy cases (Argentina vs. EU and China vs. US)
- Many cases have not proceeded to stage of WTO panel, but their outcomes will have implications for parallel AD/CVD investigations.

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Conclusions



- We estimate \$14 billion of trade in RE products is lost annually, and about \$68 billion over 5 years, with concentrated effects on solar energy products.
- The number of AD/CVD cases targeting renewable energy products has greatly expanded in the past five years; this trend will likely continue.
- Moreover, AD/CVD penalties against foreign companies probably increase likelihood of “tit-for-tat” trade disputes in RE.
- But a complete “carve-out” for environmental policies is not politically feasible at this juncture in trade policy.
- Promising reforms for trade remedies targeting RE could include: (1) the lesser duty rule and shorter time limits; (2) a public interest test (Kasteng 2013), by way of obligatory disclosure, but not as a barrier to AD/CVD cases.

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