American University Washington College of Law
Digital Commons @ American University Washington College of Law

PEEL Alumni Scholarship | Program on Environmental and Energy Law

2011

The Lurking Costs of Green Technology Metals in a Global Market

Winfield J. Wilson

Follow this and additional works at: https://digitalcommons.wcl.american.edu/peel_alumni

Sustainable Development Law & Policy

Volume 11
Issue 3 *Spring 2011: Trade, Investment, and Sustainable Development*

Article 9

The Lurking Costs of Green Technology Metals in a Global Market

Winfield J. Wilson
American University Washington College of Law

Follow this and additional works at: http://digitalcommons.wcl.american.edu/sdlp

 Part of the Environmental Law Commons

Recommended Citation
Wilson, Winfield J. "The Lurking Costs of Green Technology Metals in a Global Market." Sustainable Development Law & Policy 11, no. 3 (2011): 14, 38-39.

This Feature is brought to you for free and open access by the Washington College of Law Journals & Law Reviews at Digital Commons @ American University Washington College of Law. It has been accepted for inclusion in Sustainable Development Law & Policy by an authorized administrator of Digital Commons @ American University Washington College of Law. For more information, please contact fbrown@wcl.american.edu.

The Lurking Costs of Green Technology Metals in a Global Market

*by Winfield J. Wilson**

As the global market faces the challenge of responding to climate change, including how to convert to a green economy that uses renewable resources, it is critical to examine domestic and international legal frameworks implicated at various points in the life cycle of metallic ore resources employed in "clean" or "green" technology.[1] Although the products themselves may or may not be environmentally-sound because of their source production or their transformation into waste at the end of their life, consumer demand for the green labeling will continue to drive the production of such technology.[2] International law and policy frameworks must take into account the consequences of environmental "solutions" by negotiating protective measures against the pollution created at various stages of the life cycle of these metals and creating incentives to induce responsible trade practices to prevent a "race to the bottom" by governments willing to mine, process, and ultimately dispose of spent materials.

Lithium and a suite of metals in the lowest rows of the periodic table, called rare Earth elements, are valuable in a wide range of industrial and commercial applications, including emerging green technologies.[3] In nearly all stages in the life cycle production of these metals there are energy intensive and polluting processes used, from mining and smelting to recycling and waste management.[4] Furthermore, global climate change concerns drive how various metals are supplied, used, and ultimately regulated.[5] Trade in the raw materials used in green technology is, for better or worse, spurred by and responding to technological solutions that are perceived as tools to mitigate greenhouse gas emissions.

Against a global backdrop of increasing trade in particular metallic resources,[6] at the domestic level, the United States Environmental Protection Agency ("EPA") regulates hazardous air pollutants under various mandates found in the Clean Air Act ("CAA").[7] The EPA's use of the CAA has come under increasing scrutiny and attention in regard to the authority to regulate carbon dioxide,[8] but the CAA has long served as the vehicle for regulating other pollutants with transboundary effects, including some metals, and current proposed rulemaking demonstrates this commitment.[9]

At the international level, various treaties address the long-range air pollutants related to particular industrial sources.[10] The United Nations Environment Programme ("UNEP") treaty negotiations on mercury and the United Nations Economic Commission for Europe ("UNECE") Convention on Long-range Transboundary Air Pollution ("LRTAP") offer frameworks to address energy production and specific industrial processes, but are not universally-recognized, nor does either framework address the market for the metals used in green technology.[11]

While U.S. and international regulations address some of the issues presented by trade in the metals demanded by green technology, none are adequate. Investment and development in extracting and marketing the rare Earth elements are growing, predominantly in Asia, where industrialization and the availability of many of these commodities allow for this rapid expansion.[12] China dominates as the world leader in rare Earth supply, processing, and export, but competition is springing up in other countries, including Malaysia[13] and the United States.[14]

The global trade in metals, including the rare Earth elements, requires further international and multilateral negotiation to promote the development of this industry in a socially and environmentally responsible manner. A bilateral agreement may be particularly appropriate to address the issue between the United States and China. China is both the largest producer and consumer of rare Earth metals; the United States is the next largest direct consumer, as well as the primary indirect consumer through imports of products made with the metals from China.[15] In other words, U.S. demand for electronic technologies produced by China plays a crucial role in the global market for these metals. Therefore, it is only appropriate that the United States play an equivalent role in mitigating the environmental effects for which it is directly and indirectly responsible.[16]

On a broader and more comprehensive "cradle to grave" approach for rare Earth metals, a multilateral agreement may be appropriate and timely.[17] A multilateral approach will allow for the integration and harmonization of international oversight and regulation of the global market's supply and demand of these metals, keeping their environmental footprint in step with other multilateral environmental agreements. It is time for the international negotiations on climate change, hazardous and radioactive waste management, and long-range air pollution to be reconciled with the global markets' response to them, particularly in regard to the suite of useful but potentially damaging metals used in green technology.

Endnotes: The Lurking Costs of Green Technology Metals in a Global Market *on page 38*

** Winfield J. Wilson is a J.D. Candidate 2011 and M.P.P. Candidate 2012, at American University, Washington College of Law and School of Public Affairs.*

[1] Matthew L. Wald, *Scientists Call for New Sources of Critical Elements*, N.Y. TIMES, Feb. 18, 2011, at B5 (highlighting a report presented to the White House by the American Physical Society and the Materials Research Society on the increasing scarcity of rare metals, and the need to harmonize growing demand with a trade shortage and trade obstacles, namely Chinese monopolization); James Risen, *U.S. Identifies Vast Mineral Riches in Afghanistan*, N.Y. TIMES, June 13, 2010, at A1 (discussing the potential for Afghanistan's lithium reserves in the global market); Jim Witkin, *Building Better Batteries for Electric Cars*, N.Y. TIMES, Mar. 30, 2011, at F4 (describing the use of lithium as a key metal component of environmentally-friendly electric car batteries).

[2] Wald, *supra* note 1.

[3] *Id.*; *see also* Keith Bradsher, *U.S. Called Vulnerable to Rare Earth Shortages*, N.Y. TIMES, Dec. 15, 2010, at B1.

[4] Karl Russell, *Many Want Rare Earths, but Few are Mining Them*, N.Y. TIMES (Feb. 6, 2011), http://www.nytimes.com/2011/02/06/business/06metrics.html?ref=global (documenting the low number of mines relative to demand, in part because of the extensive environmental damage that results from extraction to industrial application).

[5] The UN Environment Programme ("UNEP") held its second session of the Intergovernmental Negotiating Committee to Prepare a Global Legally Binding Instrument on Mercury ("INC2")" in Chiba, Japan, Jan. 24-28, 2011. *Intergovernmental Negotiating Committee*, UN ENV'T PROGRAMME [hereinafter INC2], http://www.unep.org/hazardoussubstances/Mercury/Negotiations/INC2/tabid/3468/Default.aspx (last visited Apr. 17, 2011) (addressing global mercury pollution by prioritizing source emission reductions, discouraging demand, and employing current science and technological controls, driven by mercury's emission from coal-burning, artisanal gold-smelting, and other resource processing).

[6] *See* Wald, *supra* note 1.

[7] These mandates expanded greatly through the 1990 amendments, but the history of broad authority to regulate against endangerment stems from *NRDC v. Train*, 545 F.2d 320 (2d Cir. 1976).

[8] *See, e.g.*, *Massachusetts v. EPA*, 549 U.S. 497 (2007) (recognizing the possibility of the EPA to make an endangerment finding of carbon dioxide under §202(a)(1) of the Clean Air Act).

[9] Recent caselaw includes *NRDC v. EPA*, 529 F.3d 1077, 1083 (D.C. Dir. 2008); *Sierra Club v. Sandy Creek Energy Associates*, 2010 WL 4725044 (5th Cir. Nov. 23, 2010), and responsive EPA regulation includes National Emission Standards for Hazardous Air Pollutants: Mercury Emissions From Mercury Cell Chlor-Alkali Plants, 76 Fed. Reg. 13852 (proposed Mar. 14, 2011) (to be codified at 40 C.F.R. pt 63); National Emission Standards for Hazardous Air Pollutants: Primary Lead Smelting, 76 Fed. Reg. 9410 (proposed Feb. 17, 2011) (to be codified at 40 C.F.R. pt 63).

[10] UN Economic Commission for Europe, Convention on Long-Range Transboundary Air Pollution, Nov. 13, 1979, T.I.A.S. No. 10541, 18 I.L.M. 1442 (1979). Signatories include nearly all of Europe, Russia, the former Soviet states, Canada, and the United States; the status of ratification may be found at *Status of Ratification of The 1979 Geneva Convention on Long-range*

Transboundary Air Pollution as of 01 March 2011, UN Econ. Comm'n for Europe, http://www.unece.org/env/lrtap/status/lrtap_st.htm (last visited Apr. 15, 2011).

[11] *Id.*; *see also* INC2, *supra* note 5.

[12] David Kirby, *Made in China: Our Toxic Imported Air Pollution*, Discover (Mar. 18, 2011), http://discovermagazine.com/2011/apr/18-made-in-china-our-toxic-imported-air-pollution ("Even as America tightens emission standards, the fast-growing economies of Asia are filling the air with hazardous components that circumnavigate the globe.").

[13] Keith Bradsher, *Taking a Risk for Rare Earths*, N.Y. Times, Mar. 8, 2011, at B1 (detailing the Malaysian construction of a rare earth element refinery, to "break China's chokehold on the strategic metals crucial to products as diverse as Apple's iPhone, Toyota's Prius and Boeing's smart bombs.").

[14] Phil Taylor, *Nev. Mining Firm Seeks Place in Emerging Lithium Market,* N.Y. Times (June 17, 2010), http://www.nytimes.com/gwire/2010/06/17/17greenwire-nev-mining-firm-seeks-place-in-emerging-lithiu-11460.html?pagewanted=1&sq=lithium&st=cse&scp=10.

[15] *See* Russell, *supra* note 4.

[16] Kirby, *supra* note 12.

[17] An example of an international legal framework addressing waste management includes the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal, Mar. 22, 1989, 1653 U.N.T.S. 57.