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# THE HUMAN RIGHT TO ACCESS CLEAN ENERGY<sup>1</sup>

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## ABSTRACT

*This paper proposes the existence of a human right to access clean energy in view of trends favoring greater resort to renewable energy sources within several parallel policy contexts. The existing international framework for the protection and promotion of human rights may be applied to support an entitlement to access energy for individual benefit. However, the application of human rights norms to an appropriate energy source must also be compatible with the contemporary sustainable development agenda. This includes balancing economic development, sustainably using natural resources, environmental protection and poverty alleviation. A human rights approach must also be sufficiently receptive to similarities and differences in the energy strategies of developed and developing States. It is argued that a human right to access clean energy more accurately reflects intergovernmental concerns for both human development and environmental sustainability. While such a right can be employed to satisfy basic human needs, enhance living standards, maintain good human health and alleviate poverty, it can also contribute to the efficient use of existing natural resources, the prevention of climate change and environmental protection.*

## KEYWORDS

energy access; electricity; clean energy sources; human rights; sustainability.

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Energy access for individual benefit is well-established within the existing international framework for the protection of human rights and under international humanitarian law. It is an implicit attribute of several inter-related human rights and moreover underpins their practical realization. These rights relate to work, adequate living standards, health, food, housing and public participation in decision-making. In particular, access to electricity contributes to the elimination of discrimination against women. Without diminishing the importance of that policy objective, this paper argues that the human right to access energy must be realized from clean energy sources. On account of energy efficiency and sustainability concerns, the right to access clean energy sources more accurately encapsulates and furthers the human rights-sustainable development nexus. Such an approach is moreover sensitive to significant differences between developing and developed States in terms of access to local energy sources, a topic reviewed in Part One. Part Two argues that applying the human rights framework to clean energy sources is internally

consistent, already supported to some extent by governments and other influential actors and compatible with political declarations in other policy contexts.

### 1. Renewable Energy Sources as an Attribute of Development Strategies

It is axiomatic that economic growth is directly correlated with energy consumption (Goldemberg & Johansson 2002). National policies and programs are therefore concerned with securing energy supplies, self-sufficiency and preserving national sovereignty over natural resources (Bradbrook & Ottinger, 2003). Energy demand is increasing worldwide and electricity use by developing States is expected to grow ‘dramatically’ (UN Secretary-General 2000, paragraph 12). Universal electrification has become a prominent policy objective for these States. For example, the Indian Minister of Power, in a keynote address to the 2004 World Energy Congress, committed that State to providing electricity access to all rural households by 2009. Under the Electricity Act (No 36 of 2003), India therefore intends to promote a more competitive electricity sector for consumer benefit, particularly the poor.

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Although enhancing electricity access is typically the most direct method for reaching poor and rural populations, governments historically have made little effort in this regard (GNESD 2004, p. 6). Indeed, over a decade ago it was technically and commercially feasible to universally satisfy basic human needs with only one additional kilowatt of power per capita (Goldemberg et al. 1988). Instead, national energy programs focused upon modern economic sectors (industry, transport and urban infrastructure) and neglected rural development. In addition to political will, successful rural electrification programs also depended upon generation capacity and cost-recovery (Shrestha et al. 2004). Alternatively, overemphasizing rural electrification could disregard urban populations (Leach 1987).

Indeed, electricity may not be the most appropriate energy source for improving living standards. World Development Indicators suggest a wide disparity in electricity consumption between developing and developed States. In 1980 and 2000 the gross electricity consumption per capita globally was 1,442 and 2,156 kilowatt-hours respectively (UNDP 2003, pp. 300–303). This figure may be further disaggregated as follows: Arab States (518 & 1,406), East Asian and Pacific States (253 & 918), Latin America and Caribbean States (845 & 1,528), Sub-Saharan African States (463 & 457), Central and Eastern Europe States and the Commonwealth of Independent States (unknown & 2,977) and the Organization for Economic Cooperation and Development (OECD) (4,916 & 7,336). For developing countries it was just 318 and 810 kilowatt-hours with least developed countries at 59 and 77 respectively.

Emphasizing electricity would be misdirected to the extent that a market equilibrium had been reached between those individuals and States able or unable to afford electricity (Schubert 2003). Since this may entrench discrimination, electricity use could be usefully disaggregated by product. It also implies that promoting a human rights approach to electricity access as noted above may have little practical effect. For example, Western Europe, North America and several Eastern European States already enjoy near universal electricity access for urban and rural households (CSD 2001a, paragraphs 10–13 & 32). Although other States are committed to increasing energy access for all users, particularly low-

income households and those residing in remote or rural areas, the challenges of expanding national electricity grids are considerable (*id*, paragraphs 54, 55, 67, 68 & 126).

First, extending national electrical grids is extremely costly and practically difficult to achieve in dispersed or isolated areas. The inefficiencies in generating and transmitting electricity militate against that source as the preferred energy solution for developing countries. Second, even if investment levels attain the projected US\$2.1 trillion over the next three decades, approximately 1.4 billion individuals will lack electricity on account of population growth (IEA 2002). Third, centralizing electrical generation and affording plants monopolistic protection, formerly the regulatory model to rapid electrification employed by developed States, currently contributes to transmission congestion or power failures. It also blocks innovation as a result of competition from alternative energy sources.

Developed States are heavily dependent upon energy with demand frequently exceeding local resource capacity, thereby creating import dependency (Reddy 1999). Approximately two thirds of this demand originates from outside 'productive' sectors (agriculture, industry and manufacturing) in an effort to satisfy individuals (Haas 1997). Indeed, several States have reached a saturation point for electricity consumption with consumers generally unresponsive to price changes brought about by taxation (Dziubinski & Chipman 1999). Of greater concern, although energy use increases with household income there need not be any switch to less energy-intensive products (UN Center for Human Settlements 1991). The governments of developed States have accordingly focused upon demand-side management measures (such as energy efficiency labeling or performance standards for appliances) in an effort to reduce electricity demand (Colombier & Menanteau 1997). Renewable energy sources for these States contribute to conventional grid-based electricity solutions and reduce greenhouse gas emissions (WEC 2003, p. 3).

In Australia, for example, socio-economic benefits are anticipated from energy market reform with sustainability objectives taking second place. Australia is dependent upon fossil fuels since low cost coal is abundant, hydroelectric resources are limited and

nuclear power is not utilized. Although the potential exists to make greater use of renewable energy sources including biomass and solar, wind, ocean or geothermal power, the current regulatory agenda is directed at enhancing industry competition, consumer price reductions, greater investment and higher economic growth (UN CSD DESA 2001, 6–14).

The energy demands of developing States, by contrast, are driven by economic requirements and satisfying basic human needs. Given relatively greater dependency upon biomass energy sources (such as timber cut for fuelwood and charcoal production), more attention is given to sustainability as a supply-side consideration. Several case studies illustrate the point. For example, photovoltaic water pumps were installed within nine developing States. Initial results were ‘promising’: the pumps were reliable, cheap, economically efficient and socially-acceptable to local communities (UN CSD DESA 2001, 56–60). Similarly, just USD \$150,000 financed the construction of a ‘solar village’ to provide electricity, water and lighting to a health center, community center, church and school within Guatemala. The project was an ‘unquestionable success’ in terms of sustainability criteria and improved access to education, health and water supplies (*id*, 194–197).

Who identifies the appropriate energy source for generating electricity? The primary responsibility rests with national governments (Nairobi Program of Action for the Development and Utilization of New and Renewable Sources of Energy 1981, preamble). All States are expected to improve energy accessibility ‘taking fully into account that such policies should be decided by each country, and that its own characteristics and capabilities and level of development should be considered’ (WSSD 2002, paragraph 20(r)). The choice of appropriate energy sources varies between States on account of, for example, the availability and form of local energy resources (whether they be biomass, coal or water). For example, using submerged turbines to generate electricity (Reuters 2005) depends upon access to waves, currents and tides. Climatic conditions are also influential: whereas the space-heating component is the principal focus within colder countries, the electrical appliance and lighting component remains paramount for almost all others.

Access to the requisite technology is also critical, particularly for nuclear energy sources. For example, Africa has vast untapped potential for solar energy use. The most cost-effective and sustainable market niche for photovoltaic sources of electricity is rural and isolated areas (Cabraal et al. 1996), a factor which may appeal to developing country conditions. However, while sufficient to meet basic household energy requirements (light, radio broadcasting and possibly refrigeration), such a source is not suitable for manufacturing (Cabraal et al. 1995).

The intergovernmental agenda concerning renewable energy sources involves developing market-supportive regulatory frameworks and policies, capacity-building within developing States and channeling micro-finance towards the rural poor. Governments are additionally expected to remove regulatory and institutional barriers to the commercialization and utilization of renewable energy technologies (UNDP 1999). These are particular obstacles confronting many developing States. Furthermore, high per unit costs of energy derived from renewable energy sources pose considerable market barriers for developing States. They therefore need to attract the necessary private sector investment with which to develop environmentally-friendly technology and satisfy domestic energy requirements.

Existing policy trends point towards attaining a more sustainable energy future: simultaneously meeting the energy needs of a growing global population, enhancing life quality and addressing environmental concerns. Although sustainable development and access to modern energy supplies are mutually reinforcing (UN Energy 2005, p. 5), developing the global energy system should be consistent with pursuing sustainability. This entails reducing adverse impacts upon human health and the environment: living standards for both present and future generations should not be endangered and ecosystem carrying capacities should not be exceeded (UN Economic and Social Council 1997, paragraph 8). Greater attention should also be given to intergenerational equity, efficiently using current energy resources, introducing carbon sequestration technology and developing alternatives including bio-energy sources. Is there scope for a human rights contribution to each of these objectives?

## **2. Clean Energy Sources within the Framework of Human Rights**

It has been suggested that 'a much wider range of rights will be vital in any discourse on poverty' (UN OHCHR 2004, p. 12). Struggles to fulfill human needs, particularly within the development context, can result in formulating novel human rights (Stavenhagen 2003, pp. 7–8). Emergent human rights are first articulated in and defined by the practice of States as evidenced, for example, by intergovernmental political declarations.

It is proposed that everyone is entitled to an accessible (physically safe and economically affordable), acceptable (adequate, reliable and of sufficient quality) and sustainable (economically-viable but environmentally-benign) energy source for domestic (personal or household) use. The human right to clean energy employs the same individual-centric approach to renewable energy sources as the human right to development does within the sustainable development context. This is not to say that renewable energy projects are not without undesirable social and environmental attributes (Priddle 1999). 'Clean' is therefore preferable to 'renewable' or 'sustainable' since that term properly emphasizes the human and environmental dimensions of the right rather than the attributes of the energy resource or the intergenerational component. Be that as it may, a human rights orientation is simply the converse of widespread and consistent acknowledgement by States of the desirability to eliminate energy poverty, particularly for the poor, rural populations and women. Significantly, the right to clean energy is not a right to the clean energy source as such: individuals only demand the goods and services which energy provides (in other words, a derived demand for energy) and existing legal arrangements concerning natural resources or proprietary interests in technology remain unaffected.

It is important to note that all technically-feasible energy solutions remain available under a human rights framework. For example, the principle of progressive realization under Article 2(1) of the International Covenant on Economic, Social and Cultural Rights envisages that State Parties will take steps, individually and through international co-operation to the maximum of their available resources, to

progressively achieve the full realization of the rights recognized thereunder by all appropriate means. Such an obligation does not proscribe any particular manner of implementation. However, the proposition that a human rights orientation when applied to energy is a persuasive foundation for encouraging greater resort to renewable energy technology is justifiable for several reasons.

First, clean energy is consistent with the human right to a healthy environment (UN Special Rapporteur on Human Rights and the Environment, 1994). In addition, these human environments must be adequate to satisfy the needs of present generations without impairing the ability of future ones to meet their own requirements; in other words, sustainable. For example, Article 18(2)(b) of the 2003 Protocol to the African Charter on Human and Peoples' Rights concerning the Rights of Women in Africa envisages that women have the right to live in a healthy and sustainable environment. States Parties are obligated to ensure greater participation by women in the sustainable use of natural resources as well as promoting investment in renewable energy sources.

Second, the proposition is supported by several States and intergovernmental organizations. For example, the US and UK governments 'are committed to strengthening efforts to increase access to modern, cleaner and more affordable energy services' (US and UK Governments 2004). Those governments who participated in the 2004 Asia-Pacific Regional Preparatory Conference of the International Conference for Renewable Energies have additionally agreed 'to take into account the social needs of the poorest sectors of the population, in particular women and children, in the countries of the region when developing renewable energy markets' (2004, paragraph 9). At the International Conference for Renewable Energies itself, no less than 154 governments committed themselves 'to extend modern energy services to populations currently without access' (2004, paragraph 4). The World Bank has expressed a similar sentiment (World Bank 2002). Finally, parliamentarians have called for access to modern energy services to be recognized as a human right with its contents to be elaborated upon by the UN Committee on Economic, Social and Cultural Rights in light of deliberations emanating from the

UN Commission on Sustainable Development (UN CSD DESA, 2005, paragraph 23).

Third, resort to clean energy within a human rights framework is supported by actors other than States. Although governments occupy the primary role within that paradigm, the private sector, NGOs and trade unions have important contributions to make. In addition to empowering 'rights-holders', a human rights approach to development also identifies the obligations of 'duty-bearers' (Stamford Inter-Agency Workshop 2003). In this respect all actors have been called upon to ensure universal access to modern energy services, particularly for remote rural areas, in an environmentally, socially and economically sustainable manner (CSD 2001b, paragraphs 3 & 19).

Business and industry for its part would call for technological neutrality instead of governments prescribing a particular mode of production to realize the right to access clean energy. Unless consistent with their particular technical specialization, firms would resist governments conferring privileged treatment upon any one specific option (in other words, 'cherry-picking' between nuclear, solar, hydro, tidal or wind energy sources). The International Chamber of Commerce, for example, argues that there is no 'quick fix' and that commercializing all technical energy options must remain open (ICC 2001).

NGOs could be expected to support the application of human rights to clean energy. For example, the People's Movement for Human Rights Education asserts that the right to adequate housing includes 'the human right to access resources, including energy for cooking, heating and lighting' (2004). To provide electricity to the urban and rural poor, the Intermediate Technology Development Group disseminates improved cooking facilities, deploys local energy resources and minimizes adverse environmental impacts (2002, p. 18). Finally, the World Renewable Energy Assembly, composed of 450 parliamentarians, scientists, businesspersons and social activists, recently proposed a human right to renewable energy, expressing the opinion that conventional energy sources created environmental damage but left unsatisfied the individual entitlement to universally-available energy (WREA, 2005).

Finally, trade unions also support universal access to clean energy within a human rights frame-

work. This may be in the context of efforts to abolish or reverse market-oriented regulatory reforms having detrimental labor implications (International Federation of Chemical, Energy, Mine and General Workers' Unions, 2001). For example, in 2003 the Electricity Employees Federation of India requested the Indian government to restore the right to electricity for Indian people. Particularly noteworthy is 'Right to Energy-SOS Future', established in 2000 as a French association, with a predominantly trade union membership. Article 1 of its Constitution identifies as one of its objects 'to defend and promote—at the level of each State, people and nation and also at regional and world levels—the right to energy for everyone, as a fundamental human right, in conditions of equality and solidarity, as laid down in international texts on human rights of peoples and the international community regarding natural resources'. Furthermore, a Latin American Forum held in Buenos Aires during 2001 proposed that energy be accepted and defined by intergovernmental organizations ('Right to Energy-SOS Future' 2001). With a view to achieving that objective 'Right to Energy' secured UN special consultative status during 2004.

Fourth, the human right to access clean energy reflects and encourages the transition away from continued fossil fuel dependency. The IEA among others considers that current energy supply systems are unsustainable in economic, environmental and social terms. As the principal energy sources, coal, oil and natural gas or their related products (diesel, petroleum) are sufficiently abundant to satisfy energy demands well into the 21st century (WEC 2001). However, if only fossil fuels are utilized then an additional USD\$8 billion per annum for ten years is required to satisfy the basic energy needs of populations in rural and remote areas (UN Educational and Scientific Organization 1997, paragraph 1.7). Governments take the view that foreign direct investment will largely provide the necessary financial capital for constructing the necessary energy infrastructure (see, for example, Euro-Mediterranean Energy Forum 2003, paragraph 2.9).

Reducing fossil fuel dependency has implications for developed and developing countries alike. Noting 'with concern' recent trends in world energy markets, governments consider that by devel-



oping local energy sources they can create diversified energy portfolios which are less vulnerable to price fluctuations (International Renewable Energy Conference 2005, paragraph 5). Renewable energy technologies are expected to require another thirty to forty years to become cost-effective. However, if the MDG of environmental sustainability is considered alongside the objective of alleviating poverty, alternative energy sources ought to be promoted. A human right to clean energy may facilitate the ability of developing States to 'leap-frog' to more advanced energy forms. Hence legislatively-enshrined policy objectives, as illustrated by Article 5 of the Armenian Energy Saving and Renewable Energy Law of 2004, include increasing indigenous energy sources, environmental protection and enhancing consumer choice.

Fifth, encouraging greater resort to clean energy sources within a human rights framework is consistent with parallel developments within other international legal regimes and policy arenas. This is true, for example, in the context of the 1994 UN Convention to Combat Desertification in those Countries experiencing Serious Drought and/or Desertification, particularly in Africa (UNCCD). Regional action programs within Africa specifically include renewable energy sources and eco-technologies (UNCCD 2004a). States have also introduced renewable energy technology pursuant to their respective national implementation plans (UNCCD 2002a). These efforts are driven by pressure upon limited forest resources, the principal domestic energy source for local populations (UNCCD 2005, paragraph 61). Since managing biomass has produced mixed results, photovoltaic sources appear to constitute the most successful renewable energy project (UNCCD 2004b). Asian States have also promoted more efficient cooking stoves (ceramic stoves, liquid petroleum gas stoves, ethanol stoves, charcoal) in an effort to identify fuelwood substitutes (UNCCD 2002b, paragraph 67).

More prominently, the UN Framework Convention on Climate Change and the related Kyoto Protocol seek to stabilize greenhouse gas concentrations within the atmosphere. However, carbon emissions are predicted to escalate in response to social demands for economic prosperity and satisfying basic needs (IEA/OECD 1994). Asserting a human

rights orientation could pose adverse environmental impacts to the extent that fossil fuel sources are employed (Nakicenovic & Grubler 2000). Interestingly, human rights concerns have been invoked as a shield in this context. Exxon Mobil, for example, supports 'access to affordable energy by all and [the] alleviation of poverty in developing countries' (2004, p. 12). This is notwithstanding that the climate change regime could prompt firms to develop innovative production techniques, thereby attaining commercial benefits from market leadership (Hofman 2002).

Although various carbon dioxide emission outcomes can be predicted (Jefferson 2000), the Intergovernmental Panel on Climate Change encourages greater resort to renewable energy sources (World Meteorological Organization/UN Environmental Program 1990). Electrification strategies can therefore draw upon both primary and renewable energy sources (IEA/OECD 1999, p.18). Economies can be 'de-carbonized' over the long term by developing renewable energy solutions and subsequently engaging in technological transfer (WEC 2004, p.4). Thus in 2001 the G8 Renewable Energy Taskforce recommended that developed States swiftly identify advanced, cleaner, more efficient and cost-effective energy technologies and facilitate their exchange to developing countries on concessional or preferential terms as mutually agreed. This international trade could simultaneously satisfy environmental obligations and provide energy security for States (Baron & Hou 1998).

Be that as it may, the greatest obstacles to a human right to clean energy remain within the sustainable development context (UNDP 2002). National energy programs include increasing the contribution of renewable energy sources to national supplies. To minimize import dependency, renewable energy sources are employed if locally viable in conjunction with energy efficiency initiatives. However, of the most commonly adopted strategies (CSD 2001a, paragraphs 18–26), none explicitly draw upon the human rights framework.

For example, small island developing States encourage greater resort to renewable energy sources to satisfy basic human needs (Global Conference on the Sustainable Development of Small Island Developing States 1994a). To generate electricity

such States typically depend upon indigenous biomass fuels and import petroleum products (Global Conference on the Sustainable Development of Small Island Developing States 1994b, Chapter 7). At Johannesburg during 2002 the Renewable Energy Coalition of twenty-three like-minded States, the European Community (EC) and the Alliance of Small Island States expressed their 'strong commitment to the promotion of renewable energy and to the increase of the share of renewable energy sources in the global total primary energy supply' (Renewable Energy Coalition 2002, paragraph 1).

These proposals were resisted by the US, Saudi Arabia and other oil-dependent States. Developed States, twenty percent of the world's population, consume between sixty and eighty percent of the available fossil fuels to generate electricity. 'With a sense of urgency,' the WSSD merely called upon governments, intergovernmental institutions and others 'to substantially increase the global share of renewable energy sources with the objective of increasing its contribution to total energy supply, recognizing the role of national and voluntary regional targets as well as initiatives, where they exist, and ensuring that energy policies are supportive to developing countries' efforts to eradicate poverty, and regularly evaluate available data to review progress to this end' (WSSD 2002, paragraph 20(e)). That said, governments agreed to co-operate with indigenous groups, rural communities and local Agenda 21 groups when developing renewable energy technologies 'to meet their daily energy needs' (*id*, paragraph 20(g)).

Whereas renewable energy targets are currently voluntary at the international level, the EC ambitiously proposed that such sources contribute twelve percent to gross energy consumption by 2010. Such a target may not be achievable if current government strategies continue (EC 2004, paragraph 3.6). Renewable energy sources contributed 5.4 percent in 1997, 5.9 percent in 1998 and 6 percent in 2001 with only ten percent anticipated for 2010 (EC 2001a, paragraph 3.1). The European Commission intends to promote renewable energy sources 'in such a way that customers can choose anywhere in the internal market the most appropriate European product and source at the least price' (EC 1997, p. 25). Consumer demand will be managed through taxation

and consumer levies (EC 2000). Most importantly, under Articles 3(1) and 7(1) of the relevant Directive (EC 2001b), governments will encourage more environmentally-aware electricity consumption with electricity produced from renewable energy sources enjoying priority access to national grids.

## CONCLUSIONS

Applying a human rights framework has the potential to achieve access to energy for all individuals. This conclusion is consistent with further integrating the human rights paradigm into the sustainable development agenda and as one means of alleviating poverty. Although an individual entitlement to access electricity is well-established within the existing paradigm of human rights, the independent existence of a more general human right to access clean energy is equally persuasive. Such a right satisfies basic human needs and enhances living standards, particularly for the poor, but not at the expense of good human health. It also converges with environmental protection objectives insofar as encouraging the efficient and sustainable use of natural resources. Furthermore, the right to access clean energy acknowledges the different energy circumstances confronting States (for example, local capacity, technological access and consumer demand) in addition to addressing common concerns (climate change, energy security). Emphasizing the term 'clean' advances the diversification of appropriate energy source away from fossil fuels and adds impetus to adopting renewable energy targets under both the climate change legal regime and within international sustainable development policy. Although its precise contours are yet to be elaborated, a human right to access clean energy is deserving of formal adoption and subsequent promotion by all interested actors.

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