North American Wind Resource Maps and Information Sources

	Author/Source	Regional Coverage	Document	Resolution/Uncertainty	Information	Web Site
Global	NASA's and Earth Science Enterprise program (RETScreen International-NRC)	World	NASA Surface Meteorology and Solar Energy Data Set	Resolution 1° by 1° (longitude by latitude) grid system average condition within a grid element are provided. Uncertainty associated to this data is in the range of 20-25%.	Average, maximum and minimum wind speeds, wind speed distribution information (% of time at each level) and wind direction at 50 m and wind speed at 10 m.	http://eosweb.larc.nasa.gov/sse/documents/SSE_Methodology.pdf; http://eosweb.larc.nasa.gov/cgi-bin/sse/sse.cgi?na+s01+s05#s01
North America	Standford University - Nasa	North American Map	Assessment of global wind power in North America	Data from 7753 surface stations and 446 sounding stations. Results of extrapolations are color categorized by range of average wind speed and are represented as color dots at the locations of the particular measurement point.	Wind speeds calculated at 80 m height	http://www.stanford.edu/group/efmh/winds/global_winds.html
Canada	Environment Canada, Projet Eole	Country	Canadian Wind Energy Atlas	5 km²	30, 50, 80m	http://www.windatlas.ca/en/maps.php?field=E1&height=50
	HELIMAX	Quebec	Report on the wind energy potential for each region of the province	1 km²; 1:250 000	80m	http://www.helimax.com/Regie/Regie_files/Dossier_R35262004.pdf
	HELIMAX, Ressources Naturelles et Faunes Québec	Quebec	Inventory of Quebec's Exploitable Wind Power Resources (Inventaire du Potentiel Éolien Exploitable du Québec)	200m² ; 1:250 000	30, 50, 80m	http://www.mrnf.gouv.qc.ca/publications/energie/eolien/vent_inventaire_inventaire_2005.pdf
	Ressources naturelles et Faune Qc	Quebec	Wind potential maps of Quebec (speed & density)	200m² and 3 km²	65, 80,100m	http://www.mrnf.gouv.qc.ca/energie/energie/energie-sources-vent-inventaire.jsp
	Ministère des Ressources naturelles	Quebec	Wind Potential Measurement Program	41 measurement towers measuring were installed at 33 different sites.	40m	~~http://www.mrnf.gouv.qc.ca/english/energy/sources/sources-wind.jsp~~

	Université du Québec à Rimouski, WECTEC	Quebec	Carte des vents du Québec	Data from 35 sites in the province	levels from 10 to 60 m (seems to have been taken at 30 m judging from the map -- CB	~~http://www.eole.org/image.asp?pic=images/carteventQuebec.jpg&Source=;~~ ~~**http://www3.uqar.uquebec.ca/ailinca/Recherche/RenewableEnergyV28_1881-1897.pdf**~~
	Ressources Naturelles et Faunes Qc	Quebec	L'énergie au Québec	Data from 35 sites in the province	30m	http://www.mrnf.gouv.qc.ca/publications/energie/energie/energie-au-quebec-2004.pdf
	Ministry of Natural Resources/Helimax/ AWS Truewind	Ontario	Ontario Wind Atlas	1 km	10 m, 30 m, 50 m, 80 m, and 100 m	http://ontariowindatlas.ca/en/
	BC Hydro	BC	British Columbia Predicted Wind Speed Map	1 km²	65m	http://www.bchydro.com/rx_files/environment/environment1839.pdf
	BC Hydro	BC	Wind data & Wind Speed Map	Data from 18 sites in the province	From 10 to 60 m	http://www.bchydro.com/environment/greenpower/greenpower1764.html
	PEI provincial government/PEI Energy Corporatrion/Universite de Moncton	PEI	Prince Edward Island Wind Atlas	Resolution: 200 m Uncertainty: ~5-7%	Average wind speed at 30m, 50m and 80 m, power lines, power generation infrastructure, topography, surface roughness, protected nature areas etc.	http://www.gov.pe.ca/envengfor/windatlas/
	Universite de Moncton	New Brunswick	Atlas eolien du Nouveau Brunswick	Resolution: 1 km Uncertainty: ~5-7%	Average wind speed at 10 and 50 m and streams and power lines.	http://www.umoncton.ca/cge/atlas_eolien/
	HELIMAX/Manitoba Hydro	Manitoba	Wind energy potential in Manitoba	Data from 7 sites in the province	50m	http://helimax.com/projets/fiche_en.asp?nopr=104
United States						
	NREL (National Renewable Energy Laboratory) - National Wind Technology Center	Country map	Wind Resource: US Wind Resource Maps	1km²	10& 50 (wind speed and wind power density)	www.nrel.gov/wind/wind_map.html
	NREL	Country map	United State Wind Map Resources Potential (Atlas of the USA)	1km²(CB - Resolution does not look nearly that high. I would put it closer to 100 km2)	10 & 50m	http://mapserve1.nrel.gov/website/wind_resource1/viewer.htm
	NREL - Renewable Resource Data Center	Info by state	Wind Energy Resource Atlas of the United State	1km²(CB - Resolution does not look nearly that high. I would put it closer to 100 km2)	10 & 50m	http://rredc.nrel.gov/wind/pubs/atlas/maps.html
	Standford University - Nasa	Country map (data by point)	The Spatial and Temporal Distributions of U.S. Wind and Windpower	Data from 1587 surface stations & 97 soundings	80m (CB - extrapolated from measured data to 80 m)	http://www.stanford.edu/group/efmh/winds/us_winds.html
	U.S. Department of Energy	Info by state	State Energy Information: Wind Resources	1km²	10 & 50m	http://www.eere.energy.gov/state_energy/states.cfm?state=

	U.S. Department of Energy - Energy Efficiency & Renewable Energy (EERE)	Info by state	Wind & Hydopower Technologies Program - State Wind Resource Maps	200m to 1000m	50m	http://www.eere.energy.gov/windandhydro/windpoweringamerica/wind_maps.asp
	U.S. Department of Energy - Energy Efficiency & Renewable Energy (EERE)	Info by state	Wind & Hydopower Technologies Program - State Wind Resource Maps	-	-	http://www.eere.energy.gov/windandhydro/windpoweringamerica/wind_maps.asp
	U.S. Department of Energy - Energy Efficiency & Renewable Energy (EERE)	Info by state	Wind & Hydopower Technologies Program - State Wind Resource Maps	Depends of the States	50m	http://www.eere.energy.gov/windandhydro/windpoweringamerica/wind_maps.asp; http://www.nrel.gov/gis/index_of_gis.html
	Northwest Sustainable Energy for Economic Development (NWSEED)	Western States (California, Nevada, Washington, Idaho, Oregon, Wyoming and Utah)	Wind Power Maps	400 m	Wind power and wind speed at 50 m height.	http://www.nwseed.org/community energy/resources/mapping/default.asp
	Land and Water Fund of the Rockies, Northwest Sustainable Energy for Economic Development (SEED), Green Info Network and Integral GIS.	Maps of 11 Western States (including: Arizona, California, Nevada, Montana, New Mexico, Washington, Wyoming, Idaho Oregon and Utah)	Renewable Energy Atlas of the West	Resolution: appears to be better than 1 km	50m	http://mapserve1.nrel.gov/website/atlas/viewer.htm; Document d'explication: http://www.energyatlas.org/downloads/ID_booklet.pdf
	VERA Wind Energy Consulting	Vermont (County by County)	Wind Resource Mapping of Vermont Counties	Better than 1km	Wind speed at 30 m height	http://www.northeastwind.com/resources/maps.html
	AWS Truewind LLC	Ohio, New Jerser and New York	Wind Resource Explorer	Better than 1km	Average wind speed and wind power density at 30, 50, 70 and 100 m, elevation and surface roughness.	http://www.windexplorer.com/iisstart.htm
	Renewable Energy Trust	New England	New England Wind Energy Resource Maps	200 m	Average wind speed at 30m, 50m and 70 m and 100 m as we as average wind power density at 50 m	http://www.mtpc.org/renewableenergy/Community_Wind/wind_maps.htm
	Hawaii Wind Working Group	Hawaii	Hawaii's Windiest Locations	Better than 1km	Average wind speed at 30m, 50m and 70 m and 100 m as we as average wind power density at 50 m	http://www.state.hi.us/dbedt/ert/wwg/windy.html
Mexico						

Renewables for Sustainable Village Power	Oaxaca, Baja California Norte Border Region, Western Chihuahua Border Region, Northwestern Mexico Border Areas, Eastern Sonora Border Region, Western Sonora Border Region, the Quintana Roo Region, the Yucatan Region and the Campeche Region.	Wind Resource Maps	Better than 1km	50 m	http://www.rsvp.nrel.gov/wind_resources.html
Mexico Renewable Energy Program	Some States	Mapas de Recurso (Wind map resource)	1 km²	30m	http://www.re.sandia.gov/en/ac/ac-fs.htm (selectTechnical info., and than Resource maps).
Electrical Research Institute	Some sites	Wind data	Every 10 minutes (11 sites)	10, 16, 20 & 40m	http://planeolico.iie.org.mx/iiepnud.htm
Electrical Research Institute	Some areas	Wind resource maps	0.5 x 0.5 km²	10m	http://genc.iie.org.mx/genc/index2.html
NREL: National Renewable Energy Laboratory	Oaxaca	Wind Energy Resource Atlas of Oaxaca	1 km²	50 & 80m	http://www.nrel.gov/docs/fy03osti/34519.pdf
Comision National Para el Ahorro de Energia	Oaxaca	Mapas Éolocos Preliminares del Estado de Oaxaca	1 km²	50m	http://www.conae.gob.mx/wb/distribuidor.jsp?seccion=2085

North American Geothermal Resource Maps and Information Sources

	Author/Source	Regional Coverage	Document	Resolution	Information	Web Site
North America	World Energy Council	Countries information	Survey on Energy Resource 2004	-	-	http://www.worldenergy.org/wec-geis/publications/default/launches/ser04/ser04.asp
	Southern Methodist University (SMU) Geothermal Lab Research	Countries map	2004 Geothermal Map of North America	Created from four data bases , with a total of more than 24 000 points for the three North American countries. Resolution:~0.1° Longitude by Latitude	1: 6 500 000; Wells with depths deeper than 25 meters Heat flow in mW/m2	http://www.smu.edu/geothermal/2004NAMap/2004NAmap.htm
Canada	BC Hydro and Canadian Cartographics Ltd	British Columbia	Green Electricity Resources of British Columbia	N/A	Color categorization into three ranges of geothermal potential: Low (not significant), Moderate (gradient heat with temperatures up to 200 °C) and High (presence of hot fluids often in excess of 200°C), location of temperature readings are provided, as is the potential for development in GWh/year.	http://www.canmap.com/geo.htm
	International Geothermal Association	*Information*	World-wide direct uses of geothermal energy 2000	*N/A*	Merely provides country by country estimates of use/potential for various applications	http://iga.igg.cnr.it/geoworld/pdf/Lund_Freeston_Geothermics.pdf
	International Geothermal Association: Proceedings World Geothermal Congress	*Information*	The current status of geothermal explration and development in Canada	-	Provides an summary of the present status of geothermal exploration in Canada.	http://iga.igg.cnr.it/pdf/WGC/2000/R0878.PDF
	GeothermEX, Inc.	BC	Geothermal assessment of British Columbia geothermal data	-	Describes a geothermal generation project in BC	See: http://www.geothermal.org/articles/canada.pdf (International Geothermal Development Potential, July 2004, pages 164-165)
USA	Land and Water Fund of the Rockies, Northwest Sustainable Energy for Economic Development (SEED), Green Info Network and Integral GIS.	Maps of 11 Western States	Renewable Energy Atlas of the West	1km²	Heat flow gradient greater than 150 mW/m2 at the deepest interval sampled. Also based on SMU map.	Map: http://mapserve1.nrel.gov/website/atlas/viewer.htm / Research: http://www.energyatlas.org/contents/default.asp
	U.S. Department of Energy	Info by state	US Geothermal Resource Map	Heat flow contours are patterned in intervals of 20 milliwatts per square meter (mW/m²)	Broad regional divisions based on estimated subterranean temperatures at a depth of 6 kilometers presented in a ranges from 0 to > 200 °C.	http://www.eere.energy.gov/geothermal/geomap.html
	NREL (National Renewable Energy Laboratory) - EIA	Country map	Geothermal Resource Potential	5km²	Geo-referenced data of heat flow in units of mW/m². Contours were then interpolated for intervals of 10 milliwatts/m².	http://www.eia.doe.gov/cneaf/solar.renewables/ilands/fig15.html
	Oregon Institute of Technology's: Geo-Heat Center's	Country map	Map of the U.S. Geothermal Resource Areas	Data provide on over 8,977 thermal springs and wells	Temperature above & below 100 °C	http://geoheat.oit.edu/images/usmap1.gif
	Oregon Institute of Technology's: Geo-Heat Center's	States map	Where are Geothermal Resources Located?	Map show cities & towns that are located within 5 miles of a known geothermal resource that has a temperature greater than 50°C	Temperature & Depth (M) information	http://geoheat.oit.edu/colres.htm
	Southern Methodist University (SMU) Geothermal Lab Research	Country map	Heat flow	Resolution:~0.1° Longitude by Latitude	mW/m²	http://www.smu.edu/geothermal/heatflow/heatflow.htm

	Idaho National Laboratory	Info by state for Western United States (Alaska, Arizona, California, Colorada, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington and Wyoming)	Geothermal Energy	Same as other SMU maps	These maps were produced by the INL Geothermal Technologies Program with data from the Southern Methodist University Geothermal Laboratory.	http://geothermal.id.doe.gov/maps-software.shtml; http://geothermal.inl.gov/maps/index.shtml
	Geothermal Energy Association	Country map	Geothermal Potential: Estimated Earth Temperatures (ºC) at 6 km Depth	-	Grading from 0 to 250 ºC; 6km of depth	http://www.geo-energy.org/USGeoProv.pdf
	USGS Science for a changing world	Country information	Ground-Water Data for the United States	-	-	http://waterdata.usgs.gov/nwis/gw
	Great Basin Center for Geothermal Energy, University of Nevada	Great Basin area	Regional Assessment of exploration potential for geothermal systems in the Great Basin using a geographic information system (GIS).	-	-	http://www.unr.edu/geothermal/pdffiles/CoolbaughGIS2.pdf
	GeothermEX, Inc.	Country assessment	Publications and Recent projects	-	Nothing of use	http://www.geothermex.com/frame_e.html
Mexico	World Energy Council		Survey on Energy Resource 2004	-	-	http://www.worldenergy.org/wec-geis/publications/default/launches/ser04/ser04.asp
	Secretaria de Energia	Country info	Prospectiva del sector eléctrico 2004-2013	-	-	http://www.energia.gob.mx/work/resources/LocalContent/2183/21/prospec_elec_04_13.pdf
	Secretaria de Energia	Country info	Energías Renovables para el desarrollo sustentable en Mexico	-	-	http://www.energia.gob.mx/work/resources/LocalContent/1835/1/e_renovables_mexico.pdf
	Comisión Federal de Electricidad (CFE)	Country info	Programa de Obras e Inversiones del sector Electrico (2004-2013)	-	-	http://www.cfe.gob.mx/NR/rdonlyres/445BC7FF-A7E8-4487-A7CB-666861684A08/0/POISEINTEGRADO.pdf; http://www.cfe.gob.mx/www2/QueEsCFE/conocimiento/PublicacionesCFE/
	International Geothermal Association	Country info	World-wide direct uses of geothermal energy 2000	-	-	http://iga.igg.cnr.it/geoworld/pdf/Lund_Freeston_Geothermics.pdf ; http://iga.igg.cnr.it/geoworld/geoworld.php?sub=map&country=mexico
	International Geothermal Association: Proceedings World Geothermal Congress	Country info + map	Geothermal Production and development plans in Mexico	The map indicate only geothermal fields and zones in Mexico	-	http://iga.igg.cnr.it/pdf/WGC/2000/R0293.PDF ; http://iga.igg.cnr.it/geoworld/geoworld.php?sub=map&region=northamerica&country=mexico
	Instituto de Investigaciones Legislativas del Senado de la Republica	Country map	Nueva Energieas Renovables: Una Alternativa Energitica Sustentable para Mexico: Location of the Geothermal Developement	41 sites	3 or 4 km	http://xml.cie.unam.mx/xml/se/pe/NUEVAS_ENERG_RENOV.pdf
	US Department of Energy	Country map	An Energy Overview of Mexico	Megawatts (Mwe)	-	http://www.fe.doe.gov/international/Western%20Hemisphere/mexiover.html
	GoethermEX, Inc.	Country info	Publications and Recent projects	-	-	http://www.geothermex.com/frame_e.html

North American Solar Resource
Maps and Information Sources

	Author/Source	Regional Coverage	Document	Resolution	Information	Web Site
North America	World Energy Council	Countries information	Survey on Energy Resource 2004	N/A	N/A	http://www.worldenergy.org/wec-geis/publications/default/launches/ser04/ser04.asp
	NASA's and Earth Science Enterprise program (RETScreen International-NRC)	Global Coverage. Allows manual input or point and select latitude/longitude information anywhere in the world.	NASA Surface meteorology and Solar Energy Data Set	1° by 1° (Longitude by latitude) grid system, select information by latitude and longitude , Uncertainty: ~16%	Provides parameters for solar cookers, Sizing and Pointing of Solar Panels and for Solar Thermal Applications, Solar Geometry, Parameters for Tilted Solar Panels, Parameters for Sizing Battery or other Energy-storage Systems, Parameters for Sizing Surplus-product Storage Systems, Meteorology (Temperature), Diurnal Cloud Information. Specific parameters within each of these categories are listed at: http://eosweb.larc.nasa.gov/cgi-bin/sse/sse.cgi?cboivin@delphi.ca+s07#s07	http://eosweb.larc.nasa.gov/sse/documents/SSE_Methodology.pdf; http://eosweb.larc.nasa.gov/cgi-bin/sse/sse.cgi?na+s01+s05#s01
	World Energy Council, Environment Canada & Nasa Center	Countries map	Solar Energy - Measuring Solar Insolation	> 40 km	Average monthly solar insolation for the months of January and April based on Earth Observatory data from NASA for the years 1984-1993. The data in presented as color coded ranges 0 to 8.5 kwh/m²/day	http://www.worldenergy.org/wec-geis/publications/reports/ser/solar/solar.asp
Canada	Natural Resources Canada, Canadian Atlas	National Coverage	Canada Solar Radiation - Annual	Low resolution. Broad categorization of canadian regions. Basedd on 54 actual measurement stations Stations & numeric model was used simulated and additional 93 other locations. Map: 1: 12 500 000 (data from 1956-1978)	Annual mean daily solar radiation for horizontal surface as well as for inclined surfaces of 90o and 60o facing south (the equator). Maps provide color coded regions categorized in zones ranging from 7 to 15 MJ/m². Maps are also available for average daily solar radiation for the months of April and October	http://atlas.gc.ca/site/francais/maps/archives/5thedition/environment/climate/mcr4076; http://atlas.gc.ca/site/english/maps/archives/5thedition/environment/climate/mcr4078?w=4&h=4&l=3&r=0&c=0
	CanSIA	Canada	Annual Mean Daily Solar Radiation	Low, just a back and white map with broadly delineated regions of varying insolation.	Daily Insolation (MJ/m2/day)	http://cansia.ca/solarmap.asp
	Green Power Labs	Nova Scotia	kWh/m^2	~ 1km2.	Annual mean daily solar radiation (kWh/m2/day). Shows color coded regional variation with a high degree of precision for a vary narrow range from 3.33 - 3.55 kWh/m2/day.	http://greenpowerlabs.com/pics/solar.jpg
	BC Hydro and Canadian Cartographics Ltd	British Columbia	Green Electricity Resources of British Columbia	~ 1o x 1o (based on RETScreen Data which in turn is based on NASA's and Earth Science Enterprise program Uncertainty: 16%.	Annual average daily solar radiation (kWh/m2/day). Also provides location of power generation and transmission infrastructure. Solar radiation recording stations are also indicated. The map is based on Environment Canada solar radiation data compiled in RETScreen international.	http://www.canmap.com/green.htm
	Resources Naturelles & Faune Québec (Maps from UQAC)	Québec	Cartographie par satellite de la resource solaire au Quebec.	Resolution is ~40 km. Use satellite imaging and a physical model. Uncertainty: ~ 10%	Average daily insolation rate for all months based on data from 1998-2000.	http://www.mrn.gouv.qc.ca/energie/energie/energie-portrait-non-conventionnelles-cartes.jsp
USA	NREL (National Renewable Energy Laboratory) for the U.S. Department of Defense	Country map	Solar Resource for the Department of Defense	Resolution: 40km Uncertainty: 10%	kwh/m²/day; Ranging from less than 2 to greater than 9	http://mapserve1.nrel.gov/website/L48MarineCorp/viewer.htm
	NREL	Country map	United State Solar Atlas	Resolution: 40km Uncertainty: 10%	kWhrs/m²/day	http://mapserve1.nrel.gov/website/L48NEWPVWATTS/viewer.htm
	EIA (website) & National Renewable Energy Laboratory for the U.S. Department of Energy	Country map	Federal & Indian lands with solar resource potential	Resolution: 40 km Uncertainty: 10%	kwh/m²/day; Ranging from 2-3 to 8-9	http://www.eia.doe.gov/cneaf/solar.renewables/ilands/fig11.html

	Renewable Resources Data Center	Country map	U.S. Solar Radiation Resource Maps	Data from 239 stations around the USA. Low resolution as data is from interpollation of the measurements from these sites. Based on a statistical model.	kwh/m²/day (can get data for individual month or annual. Angle of orientation of the system can also be accounted for.	http://rredc.nrel.gov/solar/old_data/nsrdb/redbook/atlas/
	US. Department of Energy	Info by state	The solar resource	Low resolution, broad categorization of various regions. Based on above statistical model.	Ranging from 1000 to 7500 Whr/m²/day	http://www.eere.energy.gov/state_energy/states.cfm?state=__
	US. Department of Energy: Energy Efficiency & Renewable Energy: State Energy Alternatives	Country map	The solar resource	Low resolution, broad categorization of various regions. Based on above statistical model.	Ranging from 0 to 9+ kwh/m²/day	http://www.eere.energy.gov/state_energy/states.cfm?state=__
	NREL	Southwestern States: Arizona, California, Nevada, New Mexico and Colorado.	Concentrating Solar Power Resource Maps	Resolution: 40 km Uncertainty: 10%	Illustrates potential in very specific locations within each state that are suitable for concentrating solar power generation based on daily average solar insolation rates (kWh/m2/day). Also illustrates proximity to major power generation and distribution infrastructure.	http://www.nrel.gov/csp/maps.html
	Land and Water Fund of the Rockies, Northwest Sustainable Energy for Economic Development (SEED), Green Info Network and Integral GIS.	Maps of 11 Western States	Renewable Energy Atlas of the West	Resolution: 40 km Uncertainty: 10%	kwh/m²/day (Annual solar potential from 3.5 to 7kwh/m²/day - Solar radiation from 1 to 7)	http://mapserve1.nrel.gov/website/atlas/viewer.htm; Document d'explication: http://www.energyatlas.org/downloads/ID_booklet.pdf
Mexico						
	World Energy Council		Survey on Energy Resource 2004	-	-	http://www.worldenergy.org/wec-geis/publications/default/launches/ser04/ser04.asp
	Secretaria de Energia	Country info	Prospectiva del sector eléctrico 2004-2013	-	-	http://www.energia.gob.mx/work/resources/LocalContent/2183/21/prospec_elec_04_13.pdf
	Secretaria de Energia	Country info	Energías Renovables para el desarrollo sustentable en Mexico	-	-	http://www.energia.gob.mx/work/resources/LocalContent/1835/1/e_renovables_mexico.pdf
	Comisión Federal de Electricidad (CFE)	Country info	Programa de Obras e Inversiones del sector Electrico (2004-2013)	-	-	http://www.cfe.gob.mx/NR/rdonlyres/445BC7FF-A7E8-4487-A7CB-666861684A08/0/POISEINTEGRADO.pdf; http://www.cfe.gob.mx/www2/QueEsCFE/conocimiento/PublicacionesCFE/
	NREL & Sandia	Country map	Annual Average Global Horizontal Solar Radiation for Mexico	Grid resolution is 40km & 2km²	kwH/m²/day; ranging from less than 1 to greater than 9	http://www.re.sandia.gov/en/ac/ac-fs.htm l51
	Universidad Nacional Autonómica de Mexico (UNAM)	Country map	México - Atlas de radiación solar	-	-	http://serpiente.dgsca.unam.mx/pue/publi.html
	Instituto De Investigaciones Legislativas Del Senado de la Republica	Country map	Nuevas Energias Renovables: Una alternativa Energetica sustnetable para Mexico	5kWh/m²	kwH/m²/day; ranging from 0 to 12	http://xml.cie.unam.mx/xml/se/pe/NUEVAS_ENERG_RENOV.pdf

North American Biomass Resource
Maps and Information Sources

	Author/Source	Regional Coverage	Document	Resolution	Information	Web Site
North America	World Energy Council	Countries information	Survey on Energy Resource 2004	-	-	http://www.worldenergy.org/wec-geis/publications/default/launches/ser04/ser04.asp
Canada	IEA Bioenergy: Media Centre	Country map	Bioenergy in Canada	-	-	http://www.ieabioenergy.com/media.php?read=47
	BIOCAP Canada Foundation,	Canada	Biological resources – in particular, agriculture and forestry	-	-	http://www.biocap.ca/images/pdfs/BIOCAP_Biomass_Inventory.pdf
	Government of Manitoba	Manitoba	Manitoba's Homegrown Energy: Al-Corn Fuel Production	-	-	http://www.gov.mb.ca/est/energy/ethanol/eth_energy.pdf
	BC Hydro	BC	Biomass Potential	-	-	http://www.bchydro.com/environment/greenpower/greenpower1735.html
	Ressources Naturelles et Faunes Qc	Québec	L'énergie au Québec	Assessment of residual biomass	Data assessed in billion of TEP	http://www.mrnf.gouv.qc.ca/publications/energie/energie/energie-au-quebec-2004.pdf
	BC Hydro and Canadian Cartographics.	British Columbia	Green Electricity Resources of British Columbia	N/A	Provides an estimate of available forest industry was and landfill gas for electric generation in each forest sector of BC.	http://www.canmap.com/bio.htm
USA	National Renewable Energy Laboratory (NREL)	Country maps	A Geographic Perspective on the Current Biomass Resource Availability in the United States	County by county spacial presentation.	Provides several national maps broken down by county, each map presenting county totals for a different biomass resource type. The resource types presented include crop residues, methane from manure, forest residues, primary mill residues, secondary mill residues, urban wood waste, methane emissions from landfills, methane emissions from wastewater treatment waste and various dedicated energy crop potential projections.	http://www.nrel.gov/docs/fy06osti/39181.pdf
	EIA	Country map	Federal lands with biomass resource potential		% of biomass resource potential. Ratings are in units of potential kilowatts per county. Indiactes lands tha have a 5000 kW per county rating. Also indicate federal lands and location of power generation facilities and biomass using facilities.	http://www.eia.doe.gov/cneaf/solar.renewables/page/biomass/biomass.gif
	EIA	Country map	Biomass and Biofuels Resource Potential	Information per county	Ranging from 0-5000, 5000-40000 and to greater than 40,000 kilowatts per county. Also indicated federal lands.	http://www.eia.doe.gov/cneaf/solar.renewables/ilands/fig14.html
	US. Department of Energy	Info by state	Renewable Potential Maps: State energy information	-	Fuelwood Harvested (3+ million cubic ft/yr)	http://www.eere.energy.gov/state_energy/states.cfm?state=
	US. Department of Energy	Info by state	State energy information: Bioenergy resources	-	Dry Tons: Ranging from 0 to 6000 thousand tons per county	http://www.eere.energy.gov/state_energy/states.cfm?state=
	Oak Ridge National Laboratory (ORNL)	Info by state	Biomass Feedstock Availability in the United States	-	$/dry ton delivered	http://bioenergy.ornl.gov/resourcedata/index.html
	Land and Water Fund of the Rockies, Northwest Sustainable Energy for Economic Development (SEED), Green Info Network and Integral GIS.	Maps of 11 Western States (Washington, Nevada, Oregon, Montana, Idaho, Wyoming, Utah, Colorado, California, New Mexico, Arizona).	Renewable Energy Atlas of the West	Scale of data: 1:100,000 & 1:5,000,000	Total potential in kWh/BTUs per county from 50 to 11 200 000. Biomass resources were calculated by combining county totals of corn, barley and wheat residues from USDA agricultural crop estimates (2001–2002), animal waste from USDA county estimates (1996), forest and mill wood wastes from USDA Forest Service (1996), and potential and existing landfill gas recovery systems from the EPA landfill database (2001). Data source: US Department of Ariculture, 1996, 2002; Environmental Protection Agency 2001	http://mapserve1.nrel.gov/website/atlas/viewer.htm; Document d'explication: http://www.energyatlas.org/downloads/ID_booklet.pdf
	General Bioenergy	Southern East & Florida	Assessment of Biodiesel Potential in the Southeast and in Florida	-	-	http://www.bioenergyupdate.com/
Mexico	World Energy Council		Survey on Energy Resource 2004	-	-	http://www.worldenergy.org/wec-geis/publications/default/launches/ser04/ser04.asp

	Instituto de Investigaciones Legislativas del Senado de la Republica	Country information	Nueva Energieas Renovables: Una Alternativa Energética Sustentable para Mexico: Location of the Geothermal Developement	-	-	http://xml.cie.unam.mx/xml/se/pe/NUEVAS_ENERG_RENOV.pdf
	Electrical Research Institute	Country maps	Bioenergy maps (from livestock and agriculture wastes)	Municipality	Petajoules (PJ)	http://genc.iie.org.mx/genc/index2.html
	ANES: Red Mexicana de Bioenergica	Country data & tables	Potencial de la Bioenergía en México y Principales Acciones de Fomento del Sector Energía, SENER (presentación powerpoint)	-	-	http://www.anes.org/bioenergia/beventos.html
	ANES: Red Mexicana de Bioenergica	Country data	Mapas Tecnológicos para el Desarrollo de las Energías Renovables en México, IIE, Jorge M. Huacuz Villamar (presentación powerpoint)	-	-	http://www.anes.org/bioenergia/beventos.html
	Food and Agriculture Organization of the United Nations (FAO)	Country data	Wood fuels Integrated Supply/Demand Overview Mapping (WISDOM): A methodological approach for assessing wood fuel sustainability and supporting wood energy planning.	2 435 counties	Assess different variables (see the document); scale is 1:250 000	http://www.fao.org/documents/show_cdr.asp?url_file=//DOCREP/005/y4719e/y4719e07.htm
	LAMNET: Latin America Thematic Network on Bioenergy	Country information	Project Scope: Assessment of Resources	In process	In process	http://www.bioenergy-lamnet.org/
	Nasa	Southern Mexico	In progress: Evaluation of the rainforest capacity	-	-	

North American Small Hydro Resource
Maps and Information Sources

	Author/Source	Regional Coverage	Document	Resolution	Information	Web Site
North America	International Small Hydro Atlas	North America	Database and Web GIS of small hydro potential sites	1:1 000,000 (digital chart of the world as base maps)	-	Canada: http://www.small-hydro.com/index.cfm?fuseaction=countries.sites&country_ID=13; USA: http://www.small-hydro.com/index.cfm?Fuseaction=countries.country&Country_ID=82; Mexico: http://www.small-hydro.com/index.cfm?Fuseaction=countries.country&Country_ID=53
Canada	Environment Canada: Canadian Atlas	Country map	Water Survey (Steamflow)	2 838 stations	1:7 500 000; River flow: Ranging from 85 to 12 500 meter³/sec	http://www.wsc.ec.gc.ca/hydrology/main_f.cfm?cname=streamflow_f.cfm; http://atlas.gc.ca/site/english/maps/archives/5thedition/environment/water/mcr4178?w=2&h=2&l=2&r=0&c=0
	Hydro-Québec	Québec	Le potentiel hydraulique du Québec - Hydro Potentiel in Québec (1995)	589 sites		
	Hydro Québec	Québec	Hydro energy in Quebec: potential & current development	-	watt/hour (Wh)	http://www.mrnf.gouv.qc.ca/publications/energie/energie/energie-au-quebec-2004.pdf
	Ontario Minstry of Natural Resources	Ontario	Inventory of potential waterpower opportunities on crown land (extranet website)	1:750,000 (southern Ontario) 1:1,000,000 (northern Ontario)	891 potential sites	https://www.extranet.mnr.gov.on.ca/waterpower/hardcopymap.html
	BC Hydro - Sigma Engineering Ltd.	BC	Green Energy Study for British Columbia: Phase 2 : Mainland - Small Hydro	Assessment of stations (see table 2 but approximately 12 000 sites)	Scale 1:50 000; Power (kW), Energy (GWh)	http://www.bchydro.com/rx_files/environment/environment3931.pdf
	BC Hydro	BC	Inventory of undeveloped opportunities at potential micro hydro sites in British Columbia	Assessment of steams basin areas	River flow (m³/s), Power (kW), Energy (GWh), Green energy (GWh), Cost ($/kWh).	http://www.bchydro.com/rx_files/environment/environment1837.pdf
United States	Idaho National Engineering and Environmental Laboratory	Info by State	Virtual Hydropower Prospector: Region Selector	Different data sources: http://hydropower.inel.gov/prospector/data_sources.shtml	Depend of the option selected	http://hydropower.inel.gov/prospector/r_selector.shtml
	Idaho National Engineering and Environmental Laboratory	49 States	Estimation of Average Annual Streamflows and Power Potentials for 49 States	See Abstract to this document: http://hydropower.inel.gov/resourceassessment/pdfs/03-11111.pdf	-	http://hydropower.inel.gov/resourceassessment/states.shtml
	Idaho National Engineering and Environmental Laboratory	Alaska & Hawaii	Estimation of Average Annual Streamflows and Power Potentials for Alaska and Hawaii	See Abstract to this document: http://hydropower.inel.gov/resourceassessment/pdfs/03-11111.pdf	-	http://hydropower.inel.gov/resourceassessment/states.shtml
Mexico	Instituto De Investigaciones Legislativas Del Senado de la Republica	Country map	Nuevas Energias Renovables: Una alternativa Energetica sustnetable para Mexico	-	Potential evaluate in MW & TWh/yr	http://xml.cie.unam.mx/xml/se/pe/NUEVAS_ENERG_RENOV.pdf
	US Department of Energy	Country map	An Energy Overview of Mexico	-	Megawatts (Mwe)	http://www.fe.doe.gov/international/Western%20Hemisphere/mexiover.html

North American Ocean Resource Maps and Information Sources

	Author/Source	Regional Coverage	Document	Resolution	Information	Web Site
Canada	BC Hydro	British Columbia	Wave Energy Potential: Wave Monitoring Data Available	-	-	http://www.bchydro.com/environment/greenpower/greenpower6791.html
	Canadian Hydrolics Centre - National Research Council Canada	Canada's Atlantic and Pacific Coasts	Inventory of Canada's Offshore Wave Energy Resources	Broadly (macro) categorize wave resource regions	Rough estimates of wave power off the Atlantic and Pacific Coasts of Canada. Data is based on interpollation/extrapollation of actual measured sea data.	
United States	Electric Power Resource Institute	Information in few US States including: Oregon, California, Maine, Washington, and Hawaii. Have also done tidal assessments in Nova Scotia, Canada	Wave energy report 2003-2005	The study is based on reference stations from 6 US States (Maine, Massachusetts, California, Oregon, Washington, and Hawaii)	Annual wave height and peak wave period at each selected sites, data in kWh per meter per year	http://www.epri.com/targetWhitePaperContent.asp?program=267825&value=04T084.0&objid=297213