

Careers in Climate Change

By LISA A. SWENARSKI DE HERRERA

Pachauri, head of the United Nations Intergovernmental Panel on Climate Change that won the 2007 Nobel Peace Prize. Before coming to India, Ringwald earned an interdisciplinary master's degree in environmental management from Yale University in Connecticut.

"People ask me, 'What are you going to do with that degree!'" Ringwald says. "I tell them that anyone who gets a degree combining environmental science or technology with business will find many opportunities these days." Ringwald is looking for, and will most likely find, a position with a large corporate green team, a venture capital fund or a clean energy entrepreneur.

Neeraj Doshi, from Kota, Rajasthan, recently returned from the United States with a master's degree in environmental policy from the Fletcher School at Tufts University in Massachusetts. He leads the Artha Initiative in New Delhi, which

invests in sustainable projects in land and water management and renewable energy.

"There are so many careers now in the area of preventing climate change and the list gets longer day by day as we hit the reality of climate change," says Doshi. "These range from developing energy friendly technology to conducting public awareness campaigns on individuals' impact on the climate."

Jobs are opening up across all types of sectors.

"Climate change will affect everyone and everything," says Ringwald. "Water resources will be affected, the insurance sector will be affected. So will agriculture companies, farmers and forestry. A lot of jobs will be 'risk analysts' for all types of sectors."

Here are some of those jobs, many of which didn't exist a few years ago.

Carbon credits trader: Buys and sells carbon offsets credits in the international

Today, you can actually make money *and* help the planet. This is because climate change is now recognized by governments and the private sector as a problem that must be confronted, and many industries need experts to help reduce their carbon footprint and their energy costs.

American Fulbright scholar Alexis Ringwald is working on renewable energy at The Energy and Resources Institute (TERI) in New Delhi under Rajendra



Left: Rajendra Pachauri interacts with Alexis Ringwald at The Energy and Resources Institute in New Delhi.

Above: Neeraj Doshi with SPAN Editor-in-Chief Lisa A. Swenarski de Herrera at Jamia Millia Islamia in New Delhi during an exhibition of photographs from Doshi's trip across America.

market for companies that need them to meet Kyoto Protocol allocations. This is a market-driven way of efficiently allocating resources, which reduces the overall impact of human activities on the climate.

Clean coal technologist: Designs and assesses technologies that span the coal-power cycle to include transport, preparation, pre-combustion and post combustion. Also includes advanced coal conversion technologies.

Clean development mechanism analyst: Gathers and analyzes data for preparing Clean Development Mechanism projects for validation. Applies risk management techniques to appraise projects. A degree in engineering, environment or finance is required.

Clean energy development expert: Assesses the climate change impact of options to mitigate greenhouse gases through sustainable energy technologies, practices and programs. Specializes in assessing renewable energy and energy efficiency projects.

Carbon offsets specialist: Assesses the techno-economic potential and feasibility of reducing carbon emissions from energy practices, clean energy technologies and renewable energy.

Demand side management planner: With more demand than supply for energy, electrical companies need experts who can design and implement programs on when and where to distribute power so that peak loads are reduced and energy demand is shifted to off-peak periods.

Energy economist: Conducts economic assessments of the impact of macro and micro energy policies and programs that address national and regional energy sector reforms; bulk and retail pricing of energy supply; and the depletion, substitution and conservation of energy resources.

Energy efficiency expert: Uses in-depth understanding of the cause, nature and pattern of energy use in industrial, residential and commercial applications to plan and implement energy conservation projects and programs.

Engineer: Installs improved technologies and retrofits with better equipment.

Environmental impact assessment expert: Studies the impact of infrastructure and industrial projects on the environment. Assists developers to design and execute projects to minimize their environmental

Energy Efficiency Tips

for the Construction Sector

In a collaborative effort to streamline energy building codes, the United States Agency for International Development (USAID) and the Indian Power Ministry's Bureau of Energy Efficiency are providing Energy Conservation Building Code Tip Sheets and a Technology Atlas to architects, developers, engineers, students and professionals to help them improve energy efficiency and meet India's energy conservation goals.

The Indian Institutes of Technology and Mumbai's J.J. School of Architecture are



among 35 institutions, nonprofit and government organizations that began receiving the five-volume Technology Atlas in early February. The easy-to-use manual contains technical information and practical case studies covering lighting, heating, cooling and appliances.

The tip sheets, developed

with USAID technical assistance, are part of the joint work of the United States and India to help architecture and engineering students implement the national Energy Conservation Building Code.

impact and ensure that they comply with government regulations. This job is key in the banking and insurance industries that finance or insure risky projects, such as offshore oil rigs that could be affected by tsunamis or coal projects that are subject to carbon laws. Corporations also hire these experts for their environmental strategy teams, which assess the company's carbon footprint and the risks they face—how changing monsoon patterns, for example, will affect their agriculture production or the best place to buy land.

Energy pricing expert: Designs pricing structures based on socioeconomic impact

analysis of retail energy prices on consumer behavior and willingness to pay.

Energy auditor: Measures, maps, tracks, computes and reports energy consumption in industrial, residential and commercial sectors. The auditor is responsible for the identification, system design and application of energy saving measures. Tools used include electrical and thermal energy measurement instruments that provide information on energy use.

Energy efficiency finance analyst: Assesses the financial viability of energy saving projects, including the design of risk mitigation options through innovative financial mechanisms such as partial credit guarantees and credit enhancement.

Energy manager: Heads the energy management function in a corporate undertaking and is responsible for the planning of energy supplies and the economic, efficient and environmentally sound use of energy.

For more information:

The Energy and Resources Institute

<http://www.teriin.org/>

U.S. Green Building Council

<http://www.usgbc.org/Default.aspx>

Indian Green Building Council

<http://www.igbc.in/igbc/home.jsp>



Careers...

LEED (Leadership in Energy and Environmental Design) assessor:

Assesses and certifies compliance of existing and new residential and commercial buildings with LEED. This green building rating system, developed and promoted by the U.S. Green Building Council, encourages and accelerates global adoption of sustainable green building and development practices through the creation and implementation of universally understood and accepted tools and performance criteria. In 2007, the Indian Green Building Council launched LEED-India, which provides building owners, architects, consultants, developers, facility and project managers the tools they need to design, construct and operate green buildings.

Power distribution engineer: Not a new job but one that can save energy and reduce power outages if done well. Responsible for planning, design, operation and maintenance of electrical substations and electricity distribution networks. The engineer is conversant with the operation and maintenance of electrical equipment, such as transformers, meters, cables, switching gear, relays and instrumentation and control systems. The job requires a degree in electrical engineering and typically a high competence in IT applications.

Researcher: This can range from inventing new technologies that use less fuel to gathering and analyzing data for advocacy organizations.

Social development specialist: Works with communities that are affected by climate change, including policy advisers, relief workers dealing with natural disasters as well as economists who look at investment climates and future mitigation efforts from a financial perspective.

Venture capitalist: Invests in hot, new categories, such as hybrid cars and clean energy and clean water technologies.

Weather derivative trader: Buys futures on the international market based on weather prediction.



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