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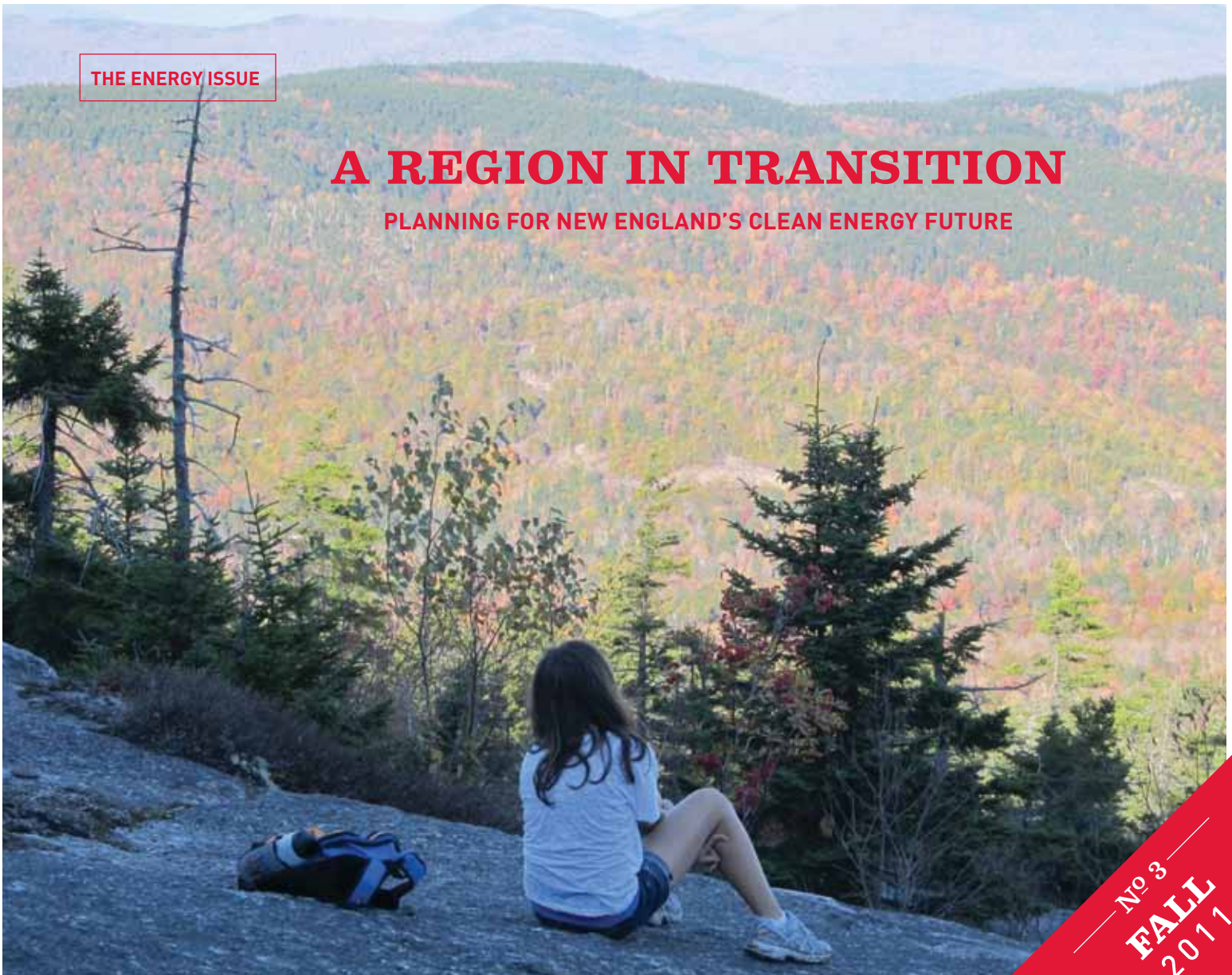
# CONSERVATION MATTERS

THE JOURNAL OF THE CONSERVATION LAW FOUNDATION | [www.clf.org](http://www.clf.org)

THE ENERGY ISSUE

## A REGION IN TRANSITION

PLANNING FOR NEW ENGLAND'S CLEAN ENERGY FUTURE



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## A REGION IN TRANSITION

### Getting our Energy Future “Right”

By John Kassel, President

**We flip the switch and our lights come on. Almost 100% of the time. Our electric system is really quite remarkable, if you think about it.**

The problem is most of us don't think about it much. Or at least not until it doesn't work, or a change is proposed that we don't like – for financial, aesthetic, or other reasons. Here's the thing: scientific consensus is that we need to reduce global greenhouse gas (GHG) emissions 80% by 2050 to keep climate change in check, which requires even greater emissions reductions from the electric sector.

Our electric system has evolved over decades in New England, with investments by various companies, regulated (or not) by several state and federal authorities, and operated by a regional entity without authority to direct a redesign. As systems go, it's a little more Rube Goldberg than BMW.

As a result, the system does not optimally promote the public good: polluting and inefficient coal plants continue to harm us, leaky nuclear plants limp on, landscape-changing transmission projects that do not significantly promote the public good are taken seriously,

and smart investments in energy efficiency, renewable energy production and careful grid management struggle for serious consideration.

Fortunately, much of the existing system is now reaching the end of its useful life. We have a rare opportunity to make design changes and investments that turn it into a holistically-planned system that will serve us well for the next 40 years. In order to keep the lights on, at a minimum, it's important that we get it right.

But the system must do more than that. Will it meet our reasonable power needs, at an acceptable overall cost? Will it respect and enhance our health and the health of our environment? Will it create and sustain jobs in our communities? Will it help us thrive?

CLF believes the answer to these questions can be “yes.” To achieve the necessary emissions reductions, we need to steadily decrease electricity demand as well as the emissions per unit of energy produced and consumed, at a rate consistent with or greater than global emissions targets. It won't be easy, but it can be done. CLF's deep engagement with regulators and businesses in all of our states, plus at the regional and federal level, will be critical to success.

But most important, *we as a region* have to commit to being in this together. For the benefit of all New Englanders, a financial analyst in Providence must use the minimum amount of power her office needs, and know that it was generated and transmitted to her in a way that was fair to all and respected the environment. An angler in northern Maine viewing a wind turbine near his favorite lake needs to have confidence that its impacts were carefully evaluated and that its benefits—both in his neighborhood and across the region—will outweigh the costs. Every New Englander concerned about the acidification of our oceans, or the threats to our forests posed by a warming climate, needs to feel that we are doing our part across our region to reverse this planetary trend.

This is the challenge in front of us. It's both technical and social. You can rely upon CLF's dedicated staff to line up the regulatory and technical pieces of the puzzle, and to lead the charge. However, New Englanders need to want a cleaner, smarter electric system, in which the whole is truly greater than the sum of its parts. For that to happen, we need to think and act together, in support of a coordinated agenda that shares the benefits and burdens of our electric system fairly across our region. And we need to value that approach. It's the one that will work.

Photo credit: Leslie Boudreau



## POWER PLAY:

### New England's Electric System's Future Looks Bright

**“New England’s inevitable changing of the power guard provides a once-in-a-lifetime opportunity to shape our energy future.”**

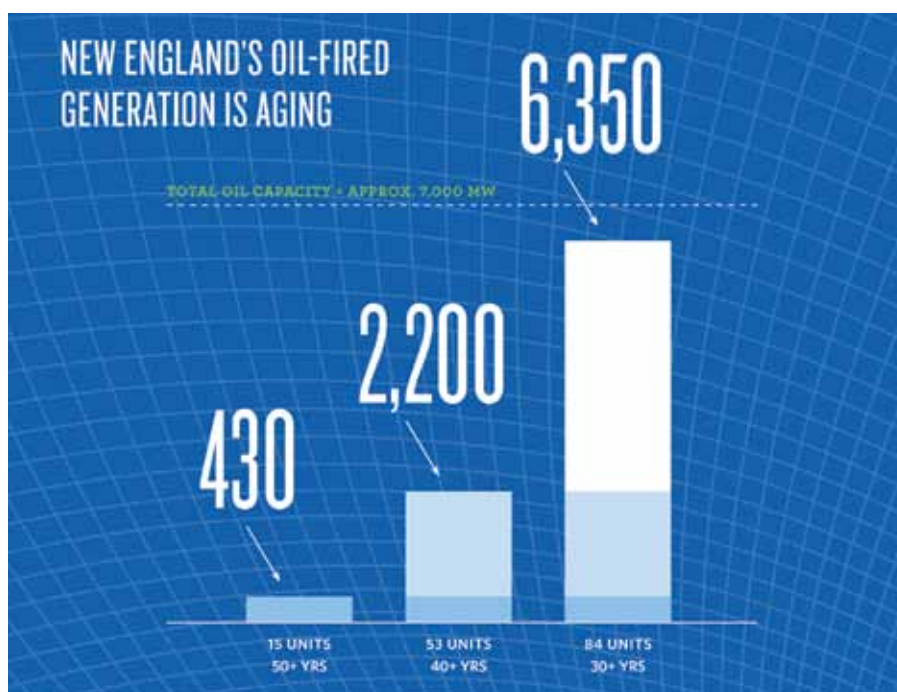
— Jonathan Peress, VP, Director, Clean Energy and Climate Change

**W**e use it to do brain surgery and to do our laundry. To heat our homes, cool our beers and watch the Patriots on TV. New Englanders will always need electricity. But over the next 40 years, where that power comes from, how we get it and when we use it will change dramatically.

New England's electric system is at a critical turning point. The fossil fuel-fired power plants that once provided the majority of our region's electricity are nearing the end of their useful lives—90% of New England's oil-fired generators and all of its seven remaining coal plants are more than 30 years old. Challenged in the market by cheaper, cleaner and more plentiful fuel sources and burdened by obsolete technology, these fossil fuel-fired power plants are no longer economically viable and will soon go the way of the dinosaur. The region's nuclear facilities, including the leaky Vermont Yankee, are also facing end-of-life issues.

#### THE REGULATION FACTOR

Meanwhile, the federal government continues to tighten standards for emissions from power plants based on undisputed evidence of the hazards from pollutants like sulfur dioxide, fine particles and mercury. These public health concerns are playing a role in evolving the electric



New England is facing a major power shift as its aging fleet of fossil fuel-fired plants begins to retire. *Chart: Courtesy of ISO New England*

system as our aging oil and coal plants consider—in the face of increasing price pressure from natural gas—whether to invest in modernizing their facilities to comply with tighter environmental regulations, or retire. The region's nuclear power plants—some of which, at more than 60 years old, have already far surpassed the life span they were designed for—are facing more intense scrutiny in the wake of Japan's Fukushima disaster. But what will replace these old facilities, more than 8000 megawatts of power that once comprised the backbone of our system? When? And at what cost?

#### NATURAL GAS LEADS...FOR NOW

For the first time in our lifetimes, the cheapest resources are also the cleanest ones: energy efficiency, demand response and, for the foreseeable future, natural gas. Natural gas-fired power plants generate 43% of New England's electricity today and its role is expected to only grow in importance over the next decade as the region's aging fleet of oil, coal and nuclear power plants retires. While cheaper, more efficient and cleaner-burning than the region's dirty incumbents, natural gas is not without its own problems.

## A HEALTHIER REGION BY ENERGY MARKET DESIGN



The Boston skyline at night.  
*Photo credit: istockphoto*

A successful transition to cleaner, more modern electricity resources depends, in large measure, on the structure and operation of the New England competitive wholesale electricity market. The regional market and electricity system is operated by ISO-New England (ISO-NE), and designed through stakeholder committees addressing issues like assuring that there is sufficient power and infrastructure to keep the lights on, studying system needs for the future, ensuring fair and efficient competition by power suppliers, and managing expansion of the power grid. CLF, an “end-user” member of the New England Power Pool (NEPOOL), brings a unique perspective by helping design market rules that reward innovation and efficiency.

ISO-NE is in the process of planning for this technology turnover. The plan will look at electricity generation in the post fossil-fuel plant age, increasing the mix of resources to create a cost-effective and resilient system, and map out solutions for meeting the region’s demand with innovative market tools and demand resources. A thriving and efficient market design will force old power plants to compete with new and facilitate investment in new resources (like wind) along with the poles and wires to transmit cleaner energy to consumers.

Because natural gas is used to provide heat as well as power, its availability for electricity can be reduced during the long, cold New England winters. Although its greenhouse gas emissions are lower than coal or oil, it is not a carbon-free resource. Coupled with the unresolved questions about the environmental costs of extracting and transporting it, and its susceptibility to price fluctuation, natural gas is not a long term solution to our energy challenges.

### BRING ON THE RENEWABLES

The good news for New Englanders is that market forces, science and technology advancements are conspiring to require our electricity to be cleaner (thus healthier) and more efficiently produced (thus less costly). Meanwhile, state policy initiatives, such as Renewable Portfolio Standards and the Regional Greenhouse Gas Initiative (RGGI) are creating powerful incentives to meet more of the region’s demand using energy efficiency and renewable resources. These policies call for as much as 30% of our region’s electricity to come from energy efficiency and renewables by 2020. While 12% of New England’s electricity came from renewables in 2010, the current grid system is not equipped—neither the wires that carry the electricity nor the market structure that governs its sale—for a large-scale transition away from oil and coal to wind and other renewables. Meeting the region’s demand—reliably, at reasonable cost, and in keeping with policy imperatives to protect public health and combat climate change—will require advance planning on a grand scale.

### CLF IN THE TRENCHES

For more than two decades, CLF has played a pivotal role in cleaning up the region’s power plants, from instigating the region’s Filthy Five regulations—among

the most powerful laws in the country governing pollution from power plants—to holding plants accountable for reducing the toxic by-products of their operations, to forcing the installation of modern water cooling systems that protect rivers and aquatic life. Under pressure from CLF and with the help of concerned community members, two coal plants, Salem Harbor Station and Somerset Station in Somerset, MA, both announced within the past 18 months their plans to retire. Vermont Yankee is teetering on the brink of shut down in 2012.

But CLF’s work behind the scenes, in the intricacies of the electricity markets, may be even more crucial to the region’s energy transition. As New England stakeholders and electricity market participants plan for and address the pending environmental challenges and opportunities in the power system [see sidebar], CLF will illuminate the issues, inform considerations and identify solutions that are in New Englanders’ best interest. Numerous members of CLF’s Clean Energy and Climate Change program represent CLF in the regional power system planning process. Says program director Jonathan Peress, “New England’s inevitable changing of the power guard provides a once-in-a-lifetime opportunity to shape our energy future.”



Turbines spin at the Rollins Wind project in Lincoln, ME, a new 40 turbine, 60MW facility that provides power to 22,600 homes.

*Photo credit: Courtesy of First Wind*

# RHODE ISLAND GIVES RENEWABLE ENERGY A BOOST

## New Laws Open Doors for Developers of All Sizes



“To get renewable energy up and running in Rhode Island, we needed a simple, standardized process that would remove the barriers to entry for all developers. The renewable energy laws now in place will encourage a diverse set of players and clean energy sources that will help us reduce greenhouse gas emissions and help meet our climate goals.”

— Jerry Elmer, Staff Attorney, CLF Rhode Island

### BACKGROUND

In 2009, in an effort to encourage renewable energy development in Rhode Island, CLF staff attorney, Jerry Elmer, wrote a precedent-setting law called the Long Term Contracting Statute (LTC Statute). The law required all Rhode Island utilities to obtain fully 24% of the state's electricity from long-term contracts from new renewable energy sources.

### THE PROBLEM

The LTC Statute worked well for developers of large renewable energy projects, but not for those who wanted to build small distributed generation (DG) projects, like a homeowner who wanted to put solar panels on her roof, or a town that wanted to put up a single wind turbine at its high school. The process was too cumbersome and complicated.

### CLF IN ACTION

Working with a number of stakeholders, CLF drafted a suite of three new laws to make it easier for smaller developers to

launch renewable energy projects in Rhode Island. The centerpiece of the new laws, a Distributed Generation Statute, provides a simple, short, standard contract – and a standard, uniform price – for developers of small renewable projects. A second law, governing net metering, allows small projects to get funded by selling power back to the utility. A third law sets a standard timetable and standard fees for connecting small renewable projects to the electricity grid.

### PROGRESS!

The three new laws all passed the Rhode Island General Assembly in the spring of 2011 – two of them unanimously – and Governor Chafee held a ceremonial bill signing over the summer. The ceremony was conducted at the site of a long-stalled wind project at a low-income housing facility that will soon be up and running as a direct result of the new laws. Thanks to CLF's involvement, Rhode Island now has one of the most extensive and coherent sets of renewable energy laws in the nation.

### NEXT STEPS

The Rhode Island Public Utilities Commission (PUC) has just begun opening cases filed under the state's new renewable energy laws and developer interest is high. CLF attorneys plan to participate in each case to offer their unique insight to the PUC on proper implementation of the laws. The new laws could have impact far beyond Rhode Island. Since their enactment, renewable energy advocates from New York to California have sought CLF's advice on how to replicate the Rhode Island model in their own states.

### [ GLOSSARY ]

**LONG-TERM CONTRACT (LTC)** / An agreement between a developer and utility stating how much of a project's power a utility will purchase, over what time period and at what price. LTCs are crucial to developers for obtaining financing for renewable energy projects.

**NET METERING** / An energy compensation system that allows even the smallest renewable energy facilities to be economically viable: energy producers don't get charged for what they produce and they get to sell their excess power back to the utility.

Photo credit: Leslie Boudreau

### WHERE CLF STANDS

CLF is tackling the reality of climate change by working to reduce greenhouse gas emissions in Rhode Island and across New England. Influencing state policy to make it easier for renewables to come online is one important way that CLF hopes to build a clean energy future that benefits our region's people, economy and environment.

# MELISSA HOFFER

VP, Director, Healthy Communities and Environmental Justice

**Millions of motor vehicles are traveling more and more miles every year on New England's roads and highways. Melissa Hoffer talks about how CLF is tackling emissions from the transportation sector in its efforts to combat climate change and make our communities healthier.**



## 2 What's the most effective way to reverse that trend?

Taking a trip on public transit produces roughly half the greenhouse gas emissions as taking that same trip by car. Where there are good public transportation options available, we need to motivate more people to use them. Where the options are insufficient, inaccessible, or non-existent, we need to prioritize investment in improving and/or building them. Where public transportation options aren't available or practical, we have to be creative and find other ways we can encourage people to reduce their passenger vehicle use.

fewer miles, a program CLF Ventures has been offering through its Environmental Insurance Agency for years.

## 4 How is CLF advancing efforts across the region to reduce emissions from transportation?

CLF has played a lead role in creating and guiding transportation coalitions in each of our New England states. These coalitions convene unlikely bedfellows, from land use planners to labor to public health interests, to pursue a shared goal of diversifying transportation options. We've also been actively involved in the Transportation and Climate Initiative, an effort among the RGGI states to reduce transportation and land use emissions.

## 3 People are pretty attached to their cars. How does CLF hope to break up that love affair?

We understand that, for the foreseeable future, people will need to drive. However, appealing to peoples' wallets can be a very effective way to get them to drive less, especially in this economy. One promising solution is car-sharing. Car-sharing can eliminate the need to own a second car, reducing a family's emissions by about half, not to mention the savings on gas, insurance, maintenance and parking. Another solution is pay-as-you-drive (PAYD) auto insurance pricing that rewards drivers with cheaper premiums if they drive

## 5 It sounds like a long-term game. Are you making progress?

CLF has a long track record of success in reducing emissions from transportation, from winning lawsuits that played key roles in strengthening national vehicle fuel efficiency standards to securing the Commonwealth's commitments to build and improve transit, to cleaning up Boston's bus fleet. And we've successfully blocked ill-conceived, car-centric transportation investments, such as the I-93 widening in New Hampshire and the Circ Highway project in Vermont, just to name a few.

## 1 Why is CLF concerned about emissions from the transportation sector?

In New England, the transportation sector not only produces over one-third of the region's greenhouse gas emissions, it is also the fastest growing source of those emissions. While we are starting to make some headway in reducing emissions from the power sector, transportation's piece of the emissions pie continues to grow unabated, and that's primarily because of an overreliance on passenger cars.

*Photo credit: Leslie Boudreau*



## WHY I GIVE TO CLF...

I support CLF because they really get things done. To me, it's very impressive that so few people can accomplish so much armed simply with brains, the law and a lot of determination. This small, dedicated group can and does hold large corporations and powerful institutions accountable for irresponsible and damaging activities that can have negative impacts on our environment. So, they deserve all the help they can get.

I decided to include CLF in my will because I wanted to make a bigger difference. There is only so much I can afford to donate on an annual basis. By including CLF in my will, I can have a greater impact on CLF's work than I ever could with my annual gift.

Passing on my passion for New England's outdoors to my sons and grandchildren is one of my fondest accomplishments. I would like to leave our seacoast, rivers, mountains and woods in better condition than I found them so that my great-grandchildren can enjoy them. By supporting CLF's work, I can help make that happen.

I want my legacy to be an environmentally healthier New England. I take comfort in the fact that CLF will continue to be my voice for a cleaner and healthier environment into the future.

Gordon Hall, III  
Marblehead, MA  
Charles Cabot Society Member  
Board of Trustees member since 2003  
Maine State Board



Gordon teaching his grandson to fly cast on a family canoe trip on the Upper Penobscot River in Maine.

### { JOIN THE CHARLES CABOT SOCIETY }

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Contact us today to learn more about giving to CLF.

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You can make a lasting gift to protect your state's and New England's environment! The Charles Cabot Society recognizes the significant commitment of individuals who support CLF through a bequest or other planned gift. As a member, you will receive insider's information on CLF's

work in your state directly from our lead advocates, CLF's publications, invitations to local CLF events and more. Leave a legacy, like Gordon, of a cleaner, healthier New England by including CLF in your will or making a life-income gift.

## CONSERVATION MATTERS

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### CLF VENTURES HAS A NEW LOOK

With a new logo and new website, CLF Ventures is bringing its message to a wider audience. CLF Ventures' vision is for a thriving economy that is environmentally and socially sustainable. Ventures works with public and private organizations to advance CLF's goals through market initiatives that demonstrate both environmental and economic benefits. Learn more at [www.clfventures.org](http://www.clfventures.org)

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