Disclaimer: The views expressed are those of Paul Gipe and are not necessarily those of the sponsor.

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Paul Gipe, wind-works.org
Electricity Rebels--Creating an Energy Revolution

Paul Gipe, wind-works.org

Wörstadt, Rheinland-Pfalz, Germany
Electricity Rebellion--Democratizing Electricity with Wind Energy

Whitelee, Glasgow, Scotland

Paul Gipe, wind-works.org
Electricity Rebellion--the Rallying Cry

Wind Energy “is a local resource. It is our resource. And we want to make money from it.”--Wolfgang Paulsen (Stromrebelle)
Rebel Agenda

• We Want Renewable Energy
• We Can Do It Ourselves
• We Bring Our Own Risk Capital and Invest in Our Own Region
• We Accept the Change in the Landscape that Results

Hans-Detlef Feddersen on the Bürgerwind Movement.

Paul Gipe, wind-works.org
Friedrich-Wilhelm-Lübke-Koog, Germany
Stromrebellen (Electricity Rebels)

- Democratizing Generation
- Creating Local Investment
- Creating Local Jobs
- Creating Opportunity--and Hope
- Denmark, Germany, and ...?
Elements of Successful Electricity Rebels

• Transparency
• Cooperation & Compromise
• Creative Problem Solving
• “Together, We’re Strong”

Hans-Detlef Feddersen on the Bürgerwind Movement.

Paul Gipe, wind-works.org
Rockenhausen, Rheinland-Pfalz, Germany
Ownership of Renewables in Germany

- 51% Farmers & Individuals
- Own 27,000 MW!
  Wind, Solar, & Biogas
- North America
  Owned by Utilities, Subsidiaries, & Developers

Paul Gipe, wind-works.org  Wörstadt, Rheinland-Pfalz, Germany
The Farmers of Nordfriesland

- 0.5% of California
  2,000 km²; 165,000 Population
- 850 MW of Wind
  90% Community-Owned
  6,000 Investors (4% of Population)
  <1% of Land Area
- 1.3 TWh/yr
  More than Altamont, More than San Gorgonio
  €100 million ($150 million)/yr

Paul Gipe, wind-works.org
Friedrich-Wilhelm-Lübke-Koog, Germany
What Has Made the Revolution Possible? What Has Empowered the Rebels?

• Grid Access
• Priority to Renewables
• Advanced Renewable Tariffs
• Desire to Make it Work!

Paul Gipe, wind-works.org

Jutland, Denmark
Meet Hans-Detlef Feddersen
Pioneer in the BürgerWind Movement

Paul Gipe, wind-works.org
Friedrich-Wilhelm-Lübke-Koog, Germany
Bürger Windpark Lübke-Koog

- 176 inhabitants
- 1,350 ha
- 49.5 MW Wind
- 95% of Households

Paul Gipe, wind-works.org
Friedrich-Wilhelm-Lübke-Koog, Germany
Bürger Windpark Lübke-Koog

- Wind
- Solar
- Biogas
Adam Twine--Westmill Coop

- 6.5 MW Wind: 5 x 1.3 MW
- 3.6 MW Solar PV
Anton Bro
Thyborøn-Harboøre Vindmøllelaug

- Near Offshore
- Share Cooperative
- 4 x 2 MW
- 35 Million kWh/yr
- All Information Public
  on the Web

Paul Gipe, wind-works.org
Josef Pesch, Fesa

• 45 MW
• 60 million kWh/yr
• Just One of Many

Paul Gipe, wind-works.org
Fesa B32 Solar PV Project

- 365 kW
- 400,000 kWh/yr

Freiburg, Germany

Paul Gipe, wind-works.org
Ursula Sladek, EWS
(Elektritzitätswerke Schönau)

- 31,000 Customers
- Hydro, Solar, & Wind
- Goldman Prize
Heinrich Bartelt--
Revolutionary Leader

“Lupinus” or Lupine

Paul Gipe, wind-works.org
Heinrich Bartelt, Dardesheim

- 62 MW Wind
- 380 kW Solar PV
- 5% Royalties

1% for Nearby Villages
2% for Landowners with Turbines
2% for Landowners without Turbines

Paul Gipe, wind-works.org
Thomas Radach--Windpark Druiberg

- Pioneering Wind Family
- Installed First Wind Turbine in Former DDR
- Turbines Are Still Operating

Paul Gipe, wind-works.org
Meet the Rebel Mayor of Dardesheim Bürgermeister Rolf-Dieter Künne

- Proud of Männerchor
- Proud of Brass Band
- Proud of Wind & Solar
  100% Renewable Energy

Paul Gipe, wind-works.org
Meet Ed Hale—a Canadian Pioneer

With a Radical Idea in Canada

Paul Gipe, wind-works.org
Toronto’s WindShare... A Pioneer in Canada
And North America...
WindShare
Toronto, Canada

• First Urban Turbine in N.A.
• Co-Owned
  WindShare Co-op
  450 Members
  Toronto Hydro
• Prominent Location
• Highly Visible
• Highly Popular

Paul Gipe, wind-works.org
WindShare
Wind Energy
As If People Matter

WindShare Cooperative
Annual Shareholders Meeting, Toronto, Canada

Paul Gipe, wind-works.org
Planetary Emergency Demands
All Hands On Deck

• The Current Denialism Will Die

. . . Eventually

Paul Gipe, wind-works.org

2012, Renfrewshire, Scotland
Nations Have Been Dabbling Around the Edges of Renewable Energy Policy

Little Recognition of the Crisis Facing the Planet

Paul Gipe, wind-works.org
Massive Renewable Energy Development Can Address Climate Change & Reindustrialize the World’s Economy

Paul Gipe, wind-works.org

Noordoostpolder, The Netherlands
“Nothing is as powerful as an idea whose time has come.”

-- Victor Hugo*

Paul Gipe, wind-works.org

Tera Kora, Curaçao, Netherlands Antilles
Revolutionary: 100% Renewable

- Dardesheim Today--Electricity
- Schleswig-Holstein 2020--Electricity
- Rheinland-Pfalz 2030--Electricity
- Scotland 2020--Electricity
- Denmark 2035--Electricity & Heat

50% Wind by 2020

Paul Gipe, wind-works.org

Druiberg, Sachsen-Anhalt, Germany
Time to Take the Road to the Future
We Need A Lot More Wind . . .

Matane, Quebec

Paul Gipe, wind-works.org
. . . A Lot More Geothermal

Paul Gipe, wind-works.org

Geothermal: Colline Metallifere, Italy
A Lot More Solar

Paul Gipe, wind-works.org
A Lot More Renewable Energy Technology for Life*

*from N.F.S. Grundtvig, Danish Theologian

Paul Gipe, wind-works.org
A Challenge Worthy of Great Nations

Paul Gipe, wind-works.org

Vestas V110, Denmark
The Revolution Has Begun

Adam Twine, Westmill Wind Cooperative, Oxfordshire, England
Paul Gipe, wind-works.org