



The public expresses almost universal support for solutions that address **both** energy and environmental problems at the same time.

– Pew Research Center Jan 24, 2006

# Apollo 10-point Plan

- Promote advanced technology & hybrid cars
- Invest in more efficient factories
- Encourage high-performance building
- Increase use of energy efficient appliances
- Modernize electrical infrastructure
- Expand renewable energy development
- Improve transportation options
- Reinvest in smart urban growth
- Plan for a hydrogen future
- Preserve regulatory boundaries

- **6. Expand Renewable Energy**

**Development:** Diversify energy sources by promoting existing technologies in solar, biomass and wind while setting ambitious but achievable goals for increasing renewable generation, and promoting state and local policy innovations that link clean energy and jobs.

# The Apollo Alliance

## *Labor Unions*

- AFL-CIO, AFL-CIO IUC, AFL-CIO BCTD, AFSCME, ATU, BCTWGM, GCIU, IUE-CWA, IAM, IBEW, IBT, LIUNA, PACE, SEIU, SMWIA, TWU, UAW, UFCW, UMWA, UNITE HERE, USWA.

## *Environmental Groups*

- CERES, Greenpeace USA, NWF, NRDC, Powershift, Rainforest Action Network, Republicans for Environmental Protection, Sierra Club, Union of Concerned Scientists, League of Conservation Voters, others

*Others:* Business, Farm, Faith, Civil Rights  
Urban, Social and Economic Justice

# Job Potential in Offshore Wind



- Manufacturing
  - 4x the jobs of natural gas
  - 40% more jobs than coal
- Installation
- Operating & Maintenance
- Secondary Economic Effects (new jobs in region = regional investment in housing, retail & service economy)

# Manufacturing Potential: REPP Study

- Study done for Ohio, Wisconsin so far
- Assumption: \$71.8B investment in wind, solar, biomass, geothermal technology in U.S.
- Assumption for wind: 50,000 MW of development (largest renewable sector)
- Assumption on jobs: firms currently producing components can grow in size as market develops; can produce enough to supply same percent of market as they do now.

# Job Potential

- In U.S.: \$27B nationwide investment in wind will produce:
  - 174,000 manufacturing jobs in wind industry (3.48 jobs per MW)
  - Benefits to 174,308 existing firms
- Ohio, Illinois, Indiana, Wisconsin, Michigan are in top 10 states to benefit

# Regional Benefits

**Table 2**

**Investment breakdown by state, resulting from \$71.8 billion national investment in renewable energy, top ten states and U.S. total**

State	Number of Firms	Millions of dollars of investment in wind	Millions of dollars of investment in solar	Millions of dollars of investment - geothermal	Millions of dollars of investment in biomass	Millions of dollars of investment in total
California	4,658	2,350	6,058	842	511	9,762
Texas	2,795	1,593	4,008	363	497	6,460
New York	1,605	1,357	1,456	746	465	4,025
Pennsylvania	1,839	1,412	1,872	342	326	3,952
Ohio	2,156	1,925	1,097	337	288	3,647
Illinois	1,961	1,660	1,452	256	272	3,640
Indiana	1,154	1,681	694	267	240	2,882
Wisconsin	1,123	1,677	431	153	273	2,534
North Carolina	940	819	1,001	329	319	2,468
Michigan	1,817	1,468	480	105	155	2,207
<b>U.S. Total</b>	<b>36,474</b>	<b>26,968</b>	<b>32,930</b>	<b>6,020</b>	<b>5,885</b>	<b>71,802</b>

Source: Renewable Energy Policy Project, 1997 Economic Census

**Table 3**  
**Potential number of firms to benefit and jobs to result from national investment in 74,000 megawatts of renewable energy, by state, top twenty states**

<b>Location</b>	<b>Number of Firms</b>	<b>New Jobs Wind</b>	<b>New Jobs Solar</b>	<b>New Jobs Geothermal</b>	<b>New Jobs Biomass</b>	<b>Total New Jobs</b>
California	4,658	14,147	24,288	3,320	2,848	44,602
Texas	2,795	10,000	12,299	1,841	3,261	27,401
Illinois	1,961	11,303	8,472	1,455	1,715	22,946
Ohio	2,156	13,215	5,957	1,896	1,854	22,922
Pennsylvania	1,839	9,029	8,119	1,538	1,832	20,517
New York	1,605	7,876	6,318	3,136	2,683	20,013
Indiana	1,154	11,186	3,834	1,410	1,524	17,954
Wisconsin	1,123	11,335	2193	845	1,844	16218
Michigan	1,817	10,369	2,457	587	1,021	14,435
North Carolina	940	4,897	4,722	1,350	2,006	12,976
Missouri	662	4,346	3,992	1,398	888	10,624
Massachusetts	1,089	3,635	5,538	481	549	10,203
Florida	1,359	3,693	4,332	454	549	9,028
Tennessee	744	4,214	2,894	478	1,031	8,617
South Carolina	419	4,194	2,427	927	623	8,171
New Jersey	1,157	3,283	3,530	512	608	7,934
Georgia	747	3,587	3,068	462	589	7,706
Minnesota	929	3,970	1,820	621	967	7,377
Virginia	530	4,096	1,547	421	449	6,513
Alabama	551	4,287	872	497	548	6,204
<b>U.S. Total</b>	<b>36,474</b>	<b>174,308</b>	<b>140,847</b>	<b>29,469</b>	<b>37,053</b>	<b>381,677</b>

Source: Renewable Energy Policy Project, 1997 Economic Census

# Lucas County Benefits

<b>NAICS Description</b>	<b># Firms</b>	<b>New FTE Jobs</b>
Speed Changer, Industrial	2	95
Fabricated Structural Metal	4	71
Other Plastics Product Mfg	11	30
Measuring/Controlling Devices	2	11
Power Transmission Equipment	1	10
Electronic Equipment and Components	2	4
Printed circuits and electronics assemblies	1	0
Iron Foundries	1	1
<b>TOTAL</b>	<b>24</b>	<b>222</b>

# Caution: Benefits are NOT Automatic

- Firms have to take advantage of this opportunity
  - Embrace new technology
  - Become more efficient (go “LEAN”)
- National & state government has to encourage and support firms in this effort
  - Industrial Development Bonds, PTCs
  - Market-building devices, e.g. RPS
- Entire region needs to embrace jobs and economic development as a key goal of wind industry development



Ohio Governor Taft  
visits Magna Machine  
Corp. in Cincinnati, Feb.  
24, 2006



"Whatever you can do or dream, you  
can begin it. Boldness has genius,  
power and magic in it. Begin it now."

— Goethe