

CRANES

Capital Region Advocacy Network for Environmental Sustainability

On behalf of its member organizations and individuals, advocating collaboratively for the environment of the South Central Wisconsin region (eight counties: Columbia, Dane, Dodge, Green, Iowa, Jefferson, Rock and Sauk) toward a high quality of life; an ecologically sustainable and just culture; and, the celebration of the beauty of this place, both natural and built.

VISION

The Capital area's environment, including water, land, and air resources, will be conserved or restored to ensure the region's quality of life and the beauty of this special place, for all who live or visit here, now and in the future.

PARTNER ORGANIZATIONS

Earth/Art® Resources
Friends of Pheasant Branch Conservancy
League of Women Voters ~ Dane County
Madison Area Bus Advocates
Madison Audubon Society
Sierra Club ~ Four Lakes Group
Western Dane Coalition for Smart Growth & Environment
West Waubesa Preservation Coalition

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(a tax-exempt 501(c)3 non-profit)
BusAdvocates.org

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Sustainable Madison Committee (SMC)
210 Martin Luther King Jr. Blvd.
Madison, WI 53703

7 December 2018

Dear SMC Members:

Thank you for your continued efforts to position the City of Madison at the forefront of climate action planning for municipal operations. There are so many positive elements in the November draft of the report. We are proud to be part of this community.

We have for over a decade been citizen leaders for municipality-based climate action. We advocate for eco-equity, with the minimization of health impacts the leading priority, to achieve a just transition to 100% renewable energy future, by 2050 or sooner.. Additionally, we support concurrent mitigation of historical climate disrupting emissions (i.e., climate restoration, at 300 ppm CO2). There is considerable evidence indicating that these goals can be accomplished with existing technology, and without using fossil fuels, polluting hydropower, risky nuclear power, or food-competitive biomass.

Please find below our recommendations for the next draft of the SEG report about a strategic action plan for City of Madison operations.

Sincerely,



Gary Werner
President

GOALS

There is a need to set higher goals. The 2014-16 Deep Decarbonization Pathways Project (DDPP), has four pathways (cases or scenarios) to 2050 (see below), which still allow continued use of:

- polluting fossil gas, relying on unproven, risky, and likely cost-prohibitive Carbon Capture and Storage (CSS)
- risky nuclear power, or unproven new technology

Being several years out of date, DDPP only partially addresses the more dire and urgent findings of the recent International Panel (IPCC) on Climate Change Report 1.5. Additionally, some experts contend that, due to the IPCC's consensus process, Report 1.5 underestimates the scope and speed of the threat of climate disruption. Some well-resourced countries will need to surpass IPCC Report 1.5's average national goals, because some other nations will undoubtedly fall short. Last, it has been argued that the USA, which has historically generated the largest volume of climate disrupting emissions, should offset those while also ending current emissions.

The city's report should therefore explicitly eschew new fossil gas generation facility infrastructure. The city's report should also explicitly eschew new nuclear plants, and call for the earliest possible shutdown of existing nuclear power plants (joining Germany and, just this week, France, which announced plans to close 14 reactors). *Already saddled with sunk coal and nuclear generation costs, we should avoid saddling a future generation with more such burdens.*

The report should share that there are multiple evidence-based reasons to expect that, with conservation, current technology, and political will, WI can by 2050 or sooner meet its energy needs with wind and solar, even assuming the forecast population increase. The report should share that the utilities involved in the Dane County climate council announced in May 2018 that they could meet 100% forecast electricity generation needs with renewable energy (RE) sooner than 2050, if it were not for sunk fossil fuel infrastructure costs.

Last the report should take the lead on offsetting historic emissions, setting an example for WI and the world.

ECONOMIC ANALYSIS

The present report provides a simplistic fiscal analysis, focused on the municipality. It is however lacking a 360-degree economic analysis, with full impacts on households. This weakens the case for the larger investment called for in Scenario 3.

Both electeds and their constituents would benefit from knowing how the proposed effort will impact household budgets, especially energy, transportation, and health expenditures. The report should also provide information about how the local economy will benefit from the transition to 100% RE, via more/better jobs.

It would be useful to point out that WI's economy leaks ~\$16 billion/yr (>\$4000/resident) for purchase of fossil fuels (Sherie Gruder, Environmental Resources Center, UW-Extension, 2017); additional funds are paid to out-of-state nuclear plant operators. With 100% RE, much of this spending would remain in Wisconsin's economy, and— if manufactured, sited, or built locally— within Madison's economy.

CONSERVATION

There needs to be a goal and metrics for reduction in energy use overall, not just carbon reduction. This is important for assuring success in making the transition to 100% renewable energy at least cost.

Entire countries have set rigorous goals for conservation. E.g., Denmark's EnergyPLAN, developed with the help of over 2000 engineers, calls for a 35-45% reduction in energy use overall, including efficiency improvements, as essential toward achieving sustainable 100% RE by 2045. Energy costs will increase <10% per household, yet household expenses overall will be net less, due to savings in other areas (e.g., transportation and healthcare). A forecast population increase of 9% is factored into the Danish plan, which also meets the European Union's requirements for

eco-social equity. [Details are available in 100% Renewable Energy by Henrik Lund *et al*; two paperback copies are available from RENEW Wisconsin for short-term borrowing; the EnergyPLAN effort is based out of Aalborg University in Denmark; Aalborg is a sister city of Racine WI.]

The State of Massachusetts recently demonstrated– for the first time and with much effort– that energy use can be reduced as much as 3%/year lower than projected with a Business As Usual (BAU) scenario, at least in the early years of a conservation program.

The city should aim for a 50% reduction in energy use overall for city ops, inclusive of the reduction that will accompany the transition to RE, via greater generation efficiency, versus fossil fuels.

The city should incent decarbonization of its supply chains. It could advantage suppliers with low/no carbon profiles. Like many Fortune 500 corporations, some of which are now sharing what they've learned with universities– the city could initiate an internal carbon fee.

RENEWABLE ENERGY CREDITS (RECs)

First it should be emphasized that maximizing conservation efforts minimizes the need for new energy, keeping new energy generation costs as low as possible, including RECs.

As some SMC members have noted, Madison has a long history of enjoying the benefits of development, while displacing negative impacts, beginning with the early decision to segregate manufacturing on the east side of the city. Energy for the community has been produced at the expense of others, including coal extraction that has destroyed Appalachian mountaintops, fracking that has polluted drinking water and air, and uranium mining that has polluted American Indian lands. We can and should do better this time around.

In our view, use of RECs to achieve the 100% RE goal should be limited insofar as possible, focusing municipal funding on energy conservation and the reduction of current emissions. RECs should be reserved for offsetting historical emissions, and sited in the city or as nearby as possible, preferably within Dane County. While we certainly favor siting RE facilities in WI (rather than Iowa for instance), we also are concerned about the reaction of local taxpayers to funding of RECs outside the city limits, to the benefit of others.

The report mentions that the city has analyzed properties that it owns for use in siting large RE facilities. Perhaps it is time to consider lands that the city plans to add, as outlined in *Imagine Madison*. While this latest plan wisely emphasizes refill/infill development, substantial greenfield development is still envisioned, e.g., on the northeast side of city near I-39, where the Town of Burke is devolving. Perhaps, given the urgency of the threat from climate disruption, it is time to ask questions like this: Would the community be better served by siting large-scale solar PV or wind turbine facilities on these peripheral city lands?

The report should detail the comparative economic impact of siting RE facilities within the city limits or county bounds, versus less geographically proximate locations, whether within WI or out of state.

That analysis should include:

- consideration of the fact that the State of WI doubles the impact fee paid to communities hosting RE generation facilities, compared to those hosting fossil fuel generation facilities.
- increased costs and other economic impacts that accompany remote facilities, including 1-3% less energy when transmission lines must carry power over longer distances.
- consideration of the communities impacted environmentally, economically, or aesthetically by overhead transmission lines that bring power to Madison (e.g., habitat fragmentation; reduced farmland; viewshed intrusions that impact outdoor recreation or tourism).

COMMUNICATIONS/MESSAGING

There are evidence-based reasons for changing the report's terminology to better inform both city elected officials and our community:

- use the words "climate disruption" rather than "climate change" or "global warming."
- use the words "fossil gas" instead of "natural gas." [Across WI, this energy source is ~60% frack gas. Across its lifecycle, from exploration/extraction to generation, fossil gas pollutes air and water as much or more than coal. Immediate health impacts are different, and perhaps less local, but still profound.]
- use "biogas" or "synth gas" for gaseous fuels derived from (respectively) biomass or other non-fossil sources

The city should also advocate for use of this wording in communications about the county's strategic climate action plan.

MISCELLANEOUS

To strengthen community resiliency, distributed renewable energy generation should be prioritized. Additionally, transmission/distribution lines should be undergrounded, and power transformers/sub-stations hardened.

The city is to be praised for partnering on projects like the Water Conservation House and the Rethke housing (first multi-family development in WI to achieve Passivhaus and LEED Platinum certification). The report should be amended to include a section on other municipality-led conservation partnership efforts that have been proven successful and cost-effective for other communities, including:

- urban forest expansion, to reduce urban heat island effects and enhance health
- energy transmission and distribution facility undergrounding (reducing power outages and increasing resilience overall)
- Fare-free transit
- Living Building demonstration project (net energy positive and net carbon negative; one has been built in WI and four others are planned, but none of those are in Dane County)
- Eco-village demonstration project
- albedo reduction through road and rooftop painting (e.g., NYC)
- etc.

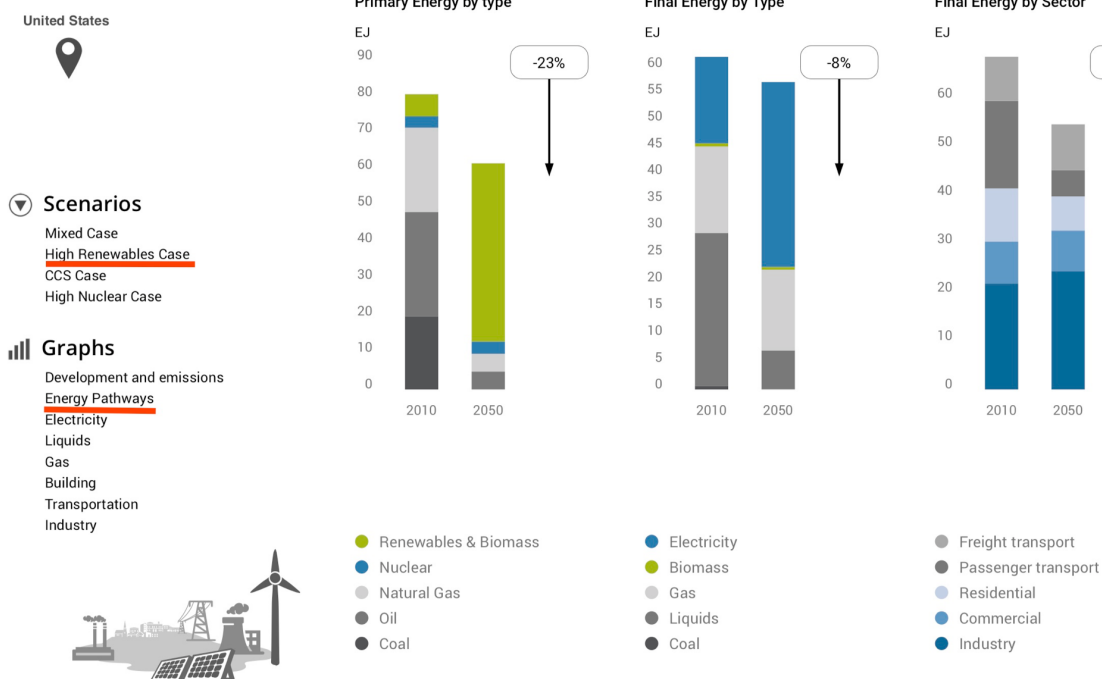
It is not apparent why city employee transportation (including air flights) or landfill emissions should be excluded from the present city effort, although one can infer it is because of ICLEI protocols for municipal operations efforts. The report should explain the omission, and detail how these emissions will be accounted for (e.g., in the county climate plan?).

Deep Decarbonization Pathways Project

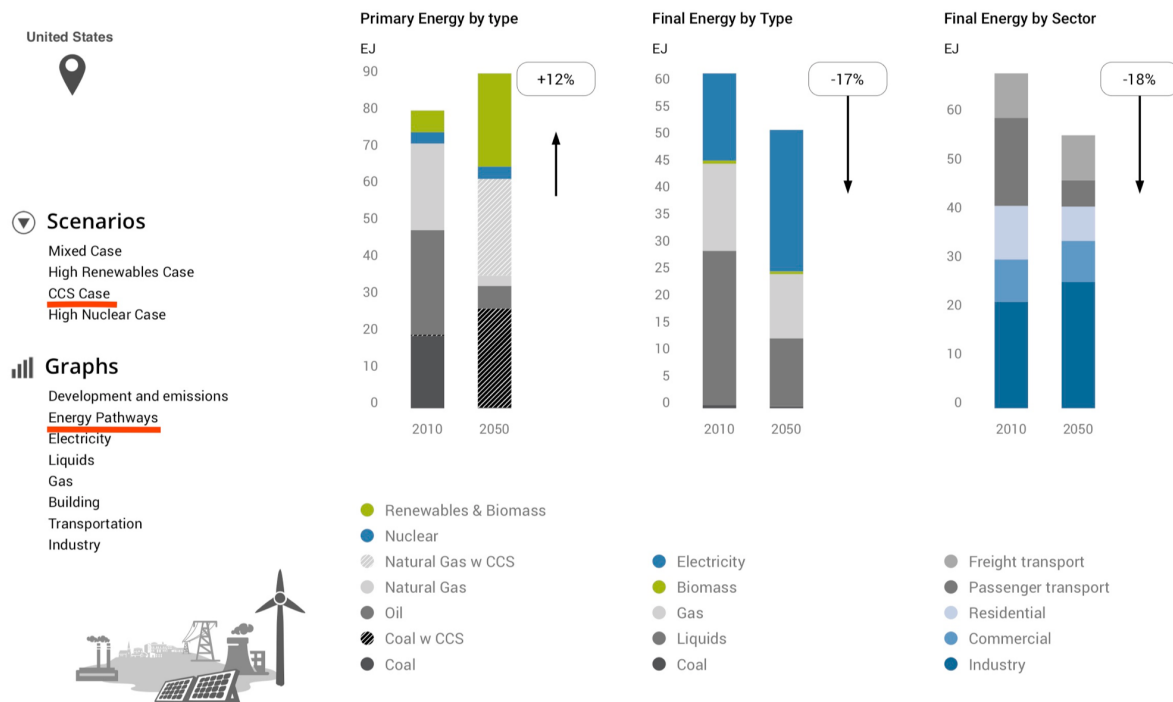
[https://en.wikipedia.org/wiki/Deep_Decarbonization_Pathways_Project]

The DDPP rejects an incrementalist approach to climate protection. Instead, meeting the climate change mitigation challenge (as set out in the 2015 Paris Agreement) will require backcasting to a suitable attractor, such as complete decarbonization.

HIGH RENEWABLES Case



CSS Case



MIXED Case

United States



Scenarios

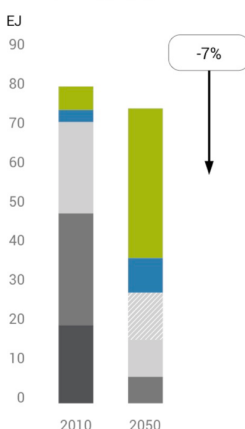
Mixed Case
 High Renewables Case
 CCS Case
 High Nuclear Case

Graphs

Development and emissions
 Energy Pathways
 Electricity
 Liquids
 Gas
 Building
 Transportation
 Industry

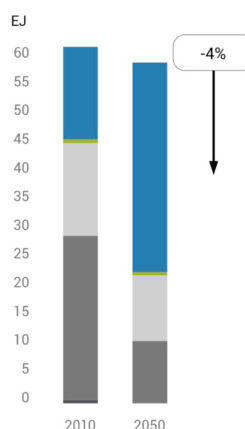


Primary Energy by type



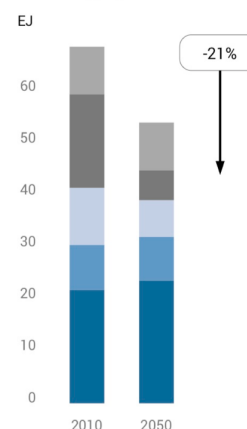
Renewables & Biomass
 Nuclear
 Natural Gas w CCS
 Natural Gas
 Oil
 Coal

Final Energy by Type



Electricity
 Biomass
 Gas
 Liquids
 Coal

Final Energy by Sector



Freight transport
 Passenger transport
 Residential
 Commercial
 Industry

HIGH NUCLEAR Case

United States



Scenarios

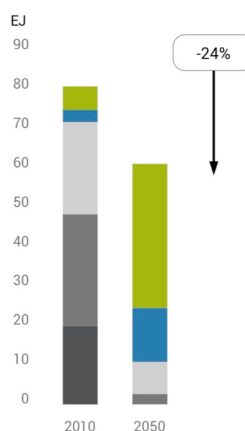
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Graphs

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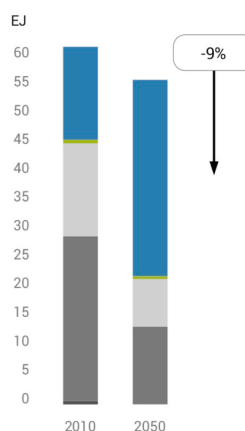


Primary Energy by type



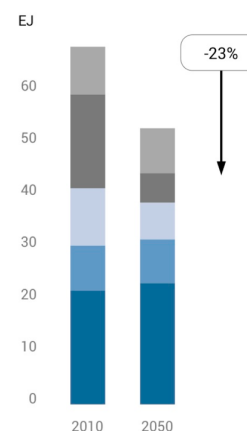
Renewables & Biomass
 Nuclear
 Natural Gas
 Oil
 Coal

Final Energy by Type



Electricity
 Biomass
 Gas
 Liquids
 Coal

Final Energy by Sector



Freight transport
 Passenger transport
 Residential
 Commercial
 Industry