

From: "Kurt Zumdieck" <kurtzum@gmail.com>
To: <compplan@seattle.gov>
Date: 1/18/2008 5:03 PM
Subject: Re: CP amendment : Utilities element : Solar energy investment

On Jan 18, 2008 4:58 PM, Kurt Zumdieck <kurtzum@gmail.com> wrote:

> Comprehensive Plan Amendment Application
>
> Date January 19th, 2008
>
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>
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>
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>
> Email: kurtzum@gmail.com
>
> Area generally affected: Seattle and Seattle City Light customers
>
> Utilities Element
>
> Text to be added:
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>
> UG3: with renewable solar energy and super-insulation standards to
> meet long-term net-zero energy goals.
>
> UG7 : ... finance, own, build, and operate silicon purification plant and
> photovoltaic cell production plant for solar panels, to be installed on the
> rooftops of Seattle City Light customers, to make the City's electrical grid
> more productive, modern and self-sustaining.
>
> UG8: Design, demonstrate and build fully-electrified buildings and houses
> that approach Net Zero energy capabilities.
>
> UG?: Recognize solar energy as the one true Green source of energy and the
> best local "retail" option for customers.
>
> Utility infrastructure discussions
>
> "Adequate utility service relies on sound facilities, and the
> diversification of generation by using local and self-sustaining sources....
>
> U7 technical assistance, financial incentives and the long-term investment
> in solar energy.
>
> U10 [delete] ...and, when fossil fuel... add by first pushing our energy
> efficiency to meet net-zero guidelines through better building practices;
> second, by making capital investments in building a domestic solar
> production industry and installing the solar panels throughout Seattle's
> roof tops to generate solar energy as a renewable, green resource; and thus
> phasing out the need for fossil fuel use.
>
> U22 Recognize Seattle's 100k roof tops suitable for solar catch as a
> potential energy resource for solar panel installations.

>

> QUESTION #1

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> By creating an in-house solar industry with long-term capital investment,
> Seattle City Light could modernize their grid and meet their future
> electrical needs.

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> QUESTION #2

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> Much in the Comprehensive Plan is made about the efforts to bring "Green"
> efforts to this City and make the place more environmentally sustainable.
> But these Green measures seem scattershot and piecemeal with no underridding
> capital committment to upgrade and modernize our electrical grid. Solar
> power is considered a minor technology, still saddled by high generation
> costs and a relative low generation efficiency compared to other source
> methods. Solar power's overall contribution to Seattle's power generation is
> miniscule.

>

> All electrical projects currently operated by Seattle City Light are large
> centralized generators in faraway locales, including its several
> hydroelectric dams. If Seattle city Light would make the capital investment
> in a complete solar power industry of its own, from birth, as refined
> silicate, to the manufacture of solar panels, to the installation and
> maintenance of the roof-top solar installations (a controlled, closed loop
>) it could benefit from both centralized production (a big enough factory
> can produce a dam's worth of energy in solar panels each year) and
> localized generation, which would eliminate the line loss for electricity
> when it travels a great distance. It would alleviate some of the increasing
> vulnerability to state-wide power lines from larger storms and copper theft.

>

>

> For a built-up urban environment like Seattle, the only "retail" option
> for further energy generation is roof-top solar panels. By recognizing the
> energy capture potential of Seattle's roof tops, where up to 100,000
> buildings would have the good Southern exposure needed for adequate solar
> contact, this collective resource could generate the equivalent of 10 dams
> worth of energy. A modernized solar-enhanced grid could meet ALL of the
> future energy needs of SCL's customers, even that of local auto
> transportation, and this could allow for the long-term use of fossil fuels
> to be phased out.

>

> To reach this goal, Seattle City Light would have to make a long-term
> capital commitment to solar energy. A local solar industry would have a
> myriad of benefits. besides the creation of thousands of Green jobs to
> modernize the grid to deal with increased capacity, and eventually the SCL
> would have two products to export to countries that shown an insatiable
> appetite for solar products: Germany, china and Japan, two of them being the
> State's biggest trading partners. Oregon has currently announced

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> Because of the lack of gas or oil deposits in the area, and its place at
> the end of the oil industry's pipelines, Seattle is particularly vulnerable
> to any disruptions of supply. On top that, Peak Oil has now past : worldwide
> production has fallen for the second straight year, while demand,
> particularly in those countries that produce oil, has risen dramatically. It
> is incumbent on the City to move beyond the slogan to a Self-sustaining
> Seattle.

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> QUESTION #3
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> As outlined in the CP, the identified public need for more energy as
> Seattle grows, and for the need to reduce the overall carbon footprint
> through fewer emissions, could be met by a combination of solar-panel
> roof-top installations, greater insulation efficiencies and the introduction
> of solar-based building technologies, like solar hot water heaters and
> radiant heat. With these measures, SCL could create for Seattle an
> all-electrical lifestyle. (A european-style consumption cap, where each
> house or unit could only use a certain amount of electricity at any given
> time might need to be explored.)
>
> Seattle City Light receives almost sixty percent of its electrical supply
> from a series of dams in its control. The assumption going forward is that
> hydroelectric power will remain cheap and reliable. Four dangers to this
> assumption have arisen; normative geo-weather patterns, Global warming,
> extended drought, and grid interruption through copper scavenging.
>
> Geo-historical weather norms : The Pacific Northwest was settled in 19th
> and 20th centuries, when the Seattle City Light supply sources and grid were
> planned and built alongside. By geologic record of the past twenty centuries
> of the Northwest, those two formative eras were the wettest and coldest of
> them all. The West as a whole tends to be warmer and drier. But by the
> measure of the glaciers and the snowfields in the Cascades and the Olympics
> and their rapid retreat, these reservoirs might not be as reliable of store
> of energy as once thought. In a warmer climate, where you have earlier
> snowmelt (and the rains to turn it into floods in Feb.-Mar.) it makes the
> reservoirs lower in the summer, just in time for peak demand. SCL admits
> that during these peak times, they already have trouble meeting demand.
> (Solar would be the perfect answer to these peak needs.)
>
> Global warming : The effects on the world's climate from man-made gasses
> in the industrial ages can no longer be denied. In our marine climate here
> in Seattle, those effects may be more nuanced than just more hot days and
> longer summers. More humidity with little rain may mark the summers,
> followed by wetter winters and bigger storms, the enormous gusts from them
> may bring the yearly specter of downed power lines and extended power
> outtages. (This should have sparked widespread discussions about burying
> all citywide powerlines!) If global warming combines with a normal, hotter
> geo-historical climate, the local challenges could be catastrophic,
> especially if it comes in the form of a long-term drought.
>
> Extended drought : One of the side-effects of global warming has been the
> thought that a long term shift to the north by the Jet Stream air current,
> or its dissolution altogether, could create a massive and extended drought
> here in the West. A ten to fifteen year drought would leave our reservoirs
> dry and SCL without much of its generating capacity. Compounding the
> problem, power would have to be pulled from coal-fired plants elsewhere, and
> that would dramatically increase greenhouse gasses.
>
> Copper wire theft : As the long-term commodities trends go up, the demand
> for metals has shot up and incidences of scavengers pulling down wires and
> stripping out the copper has already hit the SCL power lines. This long-term
> vulnerability of a state-wide power grid, where there is not a realistic
> security measure to watch the hundreds of miles of lines, will only continue
> to worsen as the economy goes into a recession.

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> QUESTION #4:
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> The impacts of changing the text would force the City of Seattle to
> re-examine solar energy as the one true Green solution to its future power
> needs; and recognize its reliance on distant centralized power plants and an
> increasingly vulnerable hydroelectric power supply. It would also help SCL
> conceptualize a new way of generating power, that the City itself and its
> roof-tops could become one large solar energy generating array. The text
> would show that investing in, owning, installing, maintaining and even the
> exporting of, the residual production from an in-house solar industry would
> be profitable and expand the overall reach of SCL.
>
> The net benefit to the community would reach beyond just the generation of
> additional electrical power. A local solar industry would create thousands
> of jobs and the auxilliary industries that would pop up would surely double
> that number. From the workers in the factory and silicon refinery, to the
> installers and the retrofitters, to the maintenance workers, all these jobs
> will be needed as we head into a very tough recession, as the housing market
> slowly collapses and the stock market with it.
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> QUESTION #5:
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> Modernizing and enhancing the electrical grid with local arrays of roof
> top solar panels fits nicely with all of the environmental and green
> declarations throughout the Comprehensive Plan.
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> Data on the relative expense of solar panels, compared to other forms of
> electrical generation, is not a clear resolution either way. Prices of solar
> panels and photovoltaic cells has come down dramatically in the last ten
> years, but they have risen again as rising demand has snapped up excess
> production. Initial subsidies and capital investments over the first ten
> years will be needed for this project but in time of recession, investment
> in infrastructure is often the mandate reverse economic hardship and ensure
> the future re-emergence of prosperity. (The New Deal and all of the public
> works projects during the Depression laid the groundwork for the Post-war
> boom.)
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> QUESTION #6: Public support for the use of renewable resources to generate
> energy needs, ranges between 65% and 70% in various public opinion polls. As
> for a public hearing on these amendments, I have not conducted any public
> meetings but with the new Energy Committee seated in February, it would be a
> great place to hold hearings on this amendment. As an old Classmate of CR
> Douglas I will approach him about a roundtable panel on his City Inside/Out
> show.
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> Signed : Kurt F. Zumdieck
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