

Carbon Free Power Project (Small Modular Nuclear Reactors)

Should the County of Los Alamos continue its participation into the next phase of the Carbon Free Power Project?

All Statements sorted chronologically

As of February 23, 2018, 9:12 AM



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As of February 23, 2018, 9:12 AM, this forum had:

Attendees: 196

All Statements: 39

Hours of Public Comment: 2.0

This topic started on January 26, 2018, 5:34 PM.

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Should the County of Los Alamos continue its participation into the next phase of the Carbon Free Power Project?

Jean Dewart inside EASTERN AREA (registered)

February 20, 2018, 4:32 PM

Yes, Los Alamos County should continue into the next phase of the Carbon Free Power Project. Los Alamos needs to replace base load electricity supply over the next few years due to the closure of coal fired power plants. If we want to continue with supporting carbon free generation, nuclear power is the currently available technology. If we do not pursue the UAMPS proposal (because it is judged to be too expensive or not sufficiently robust) then we need to find other nuclear power plant generating capacity to purchase. Of course, as they are available, we should support wind and solar energy projects for our future needs as well.

Reid Priedhorsky inside ASPEN - WALNUT (registered)

February 19, 2018, 12:13 PM

Yes.

Climate change is real and a critical, urgent problem. It requires aggressive investment in all types of carbon-neutral energy, which means both nuclear and renewables. Los Alamos is the type of community that should be leading, not following, and this is a great opportunity to do so, even if results are not guaranteed.

David North inside LA SENDA (registered)

February 19, 2018, 12:05 PM

There are good arguments for the design and for participation. However, Idaho is a long way from here. Undoubtedly transmission trading is part of the deal, etc, but my main concern is once again moving toward a system in another state where we do nothing to further development in New Mexico, regardless the system used. Idaho does not need our support. New Mexico does. Probably there are also DOE issues involved that complicate the question. So I'd put it like this: unless the argument to relocate systems out of state is overwhelmingly compelling, we should be working with a New Mexico system, the more local the better.

Name not shown inside NORTH MESA (registered)

February 18, 2018, 12:28 PM

The cheapest energy available today is solar power. Solar PV with batteries is extremely cost-effective (much more so than coal or nuclear) and is increasingly being used for base load electric supply around the world. There isn't any risk or research that needs to be done. These systems are cost-effective, carbon-free, known quantities and we could begin the process to install one immediately. It would be reasonable to look at land owned by the county and Lab to find the space for the array. As the Lab uses most of the power, an agreement that sites some or all of the array on LANL property ought to be possible.

In addition to a solar and battery power system, there are other things we could do immediately to reduce the county's carbon footprint. For example, installing motion detection street lighting would significantly reduce our energy usage and help to keep our dark skies clear of unnecessary background light. Motion sensing street lights have been used in Europe where they have proven capable of illuminating several streets lights in a row when the motion and direction of a car or pedestrian is detected. Only the lights that are needed are

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illuminated.

Nuclear power is an expensive dead end as fuel is not available from even the most intensive mining possible in quantities needed to power our future unless breeder reactors are built. Given the very high consequences of a breeder reactor failure, even if the probability of an accident were infinitesimal, we would be ill-advised to build them. It is very difficult to calculate the odds of failure when the probabilities are very low as there are too many unknown and unknowable unknowns. For such dangerous reactors that would run day-in and day-out for decades, we could never design a system that had a sufficiently low probability of failure to make it safe enough to build; the consequences of a failure are too explosive.

One thing we do know is that there will be many cost overruns in bringing a new nuclear reactor system online and the county ratepayers would incur at least part of these costs if we continue to be part of the so-called Carbon Free Power Project.

The nuclear industry also has no way of dealing with its waste. The website for the NuScale Inc. Small Modular Reactor (SMR) Project FAQ blithely states that nuclear waste is a political not a technical problem. I do not believe this is true. If all of the technical problems at Yucca Mountain had been solved, we would have a working high-level nuclear waste repository there. Even if it were true that the only obstacle to solving the nuclear waste problem was political, it is still an unsolved problem. We still have many, many tons of nuclear waste sitting at reactor sites that are extremely dangerous both from a technical (think of Fukushima where they had trouble keeping the cooling pumps to the spent fuel ponds running and lack of cooling would have released an enormous amount of radioactive material into the air) and a terrorist standpoint. Pretending the waste problem is easily solvable and not a serious obstacle to nuclear power is terribly misleading.

In summary we need to look at ways other than the SMR project to make our county energy carbon free.

2 Supporters

Name not available (unclaimed)

February 17, 2018, 10:29 AM

Go for it.

Laurel Conner inside NORTH COMMUNITY (registered)

February 16, 2018, 9:41 AM

I would rather see the county have a greater investment into wind and solar.

Laurel Conner

1 Supporter

John Elder inside DOWNTOWN RESIDENTIAL S (registered)

February 16, 2018, 9:14 AM

Yes, go ahead. I worked in nuclear power early in my career and had confidence in it. The anti-nuke craze was such a waste, delaying nuclear power development by more than the 50 years I have been watching the US

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blow billions on windmills and solar panels.

Name not available (unclaimed)

February 16, 2018, 6:07 AM

The county should check out all wind and solar options first. We do not need a nuclear option.

Sarah Fields outside Community Boundaries (registered)

February 15, 2018, 1:01 PM

Below please find comments on the proposed Power Sales Contract between the Incorporated County of Los Alamos, New Mexico, and the Utah Associated Municipal Power Systems (UAMPS) related to a proposed NuScale Inc. Small Modular Reactor (SMR) Project to be constricted at the Idaho National Lab, Idaho. These comments are submitted by Sarah Fields, Program Director, Uranium Watch, Moab, Utah. Uranium Watch and Ms. Fields have been following the proposed SMR project and the NuScale design certification process for the past few years.

1. UAMPS and the Los Alamos County (LAC) Council refer to the proposed UAMPS SMR Project as Carbon Free Power Project (CFPP), yet there is no information in support of that very misleading description. Power, most likely derived from fossil fuel, is used for uranium mining and milling, uranium conversion and enrichment, fuel fabrication, fabrication and construction of the SMR, operation of the SMR, used fuel storage, irradiated fuel disposition, transport (road, rail, and ocean shipping), and myriad other aspects of the nuclear fuel chain necessary to license, fabricate, construct, and operate a reactor and the irradiated fuel storage site it will become. Nothing about a nuclear reactor is "Carbon Free." "Carbon Free Power Project" is an egregious Public Relations misnomer leading to false assumptions and poor decisions._

2. The Tennessee Valley Authority (TVA) Clinch River Nuclear Site Early Site Permit (ESP) Application for an SMR project addresses the Environmental impacts associated with different SMR designs, including NuScale design. That ESP Application, Part 3, Environmental Report Revision 1, Chapter 5.7 (Uranium Fuel Cycle and Transportation Impacts) discusses Chemical Effluents. (<https://www.nrc.gov/docs/ML1800/ML18003A456.pdf>). Section 5.7.1.4 states:_ "Because of the gaseous effluents from the [Uranium Fuel Cycle] UFC needed to support the SMRs at the CRN Site are equivalent to the effluents from a small 44 MWe coal-fired power plant or, for an equivalent amount of energy produced with coal, the chemical effluents would be about 2.3 times greater. Therefore, it is concluded that the effects to the degradation of air quality from the power generation needed to support the UFC is SMALL." _ Equating the gaseous effluents from the uranium fuel cycle needed produce the uranium fuel for the proposed NuScale SMR with a 44 MWe coal-fired power plant does not equal "Carbon Free." Nor is the proposed reactor radiological and chemical effluent free (liquid, gas, and solid).

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3. UAMPS did not provide detailed information on the full costs, financial commitments, and risks associated with Los Alamos County's participation in the subsequent phases of the project. The presentations and subsequent question and answer session at the January 25 Board of Public Utilities and LAC Council meeting did not provide a clear picture of the expected commitments, possible reimbursements, and other aspects of the financial commitments and risks at each stage of the project. Questions were asked that have not been yet answered, so that the answers are available to the public during the comment period. UAMPS should have

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provided a written document to the LAC Council with full financial details of the project. A slide presentation, talking points, and the Executive Summary did not provide the Council, the public, and the ratepayers with the information required for an informed decision to approve the Power Sales Contract (PSC).

4. The Council Staff Report did not include an independent analysis of the full costs, financial commitments, and risks at every stage of the UAMPS SMR Project. The Council should not rely solely on those who are committed to the SMR Project or have an interest in the Project, financial or otherwise._

5. The Agenda Packet documents for the January 25 meeting are no longer available to the public on the LAC website. Therefore, members of the public wanting to comment might not have this information before them. All relevant information should be readily available on the LAC website, not just bits and pieces._

6. At the January 25 meeting there was discussion of a NuScale “guarantee” of \$65 per MegaWatt hour (MW/h) of Levelized Cost of Energy (LCOE) over a period of 40 years. There is no information about the nature of that “guarantee;” that is, the terms of a written guarantee that would be developed and signed by the respective parties. _

7. In 2015 NuScale stated, in a presentation (“NuScale Technology & Economic Overview Simple, Safe, Economic;” by Jay Surina, Chief Financial Officer), that their estimate of the LCOE for a 12-unit SMR would be \$98 to \$108 per MW/hr, modeled as a 40-year project. This estimate excludes many of the owner’s costs, include management infrastructure, permits, inspections, regulatory and legal fees, engineering services, switchyard, owner’s project development costs, and other owner costs. NuScale estimates that owner’s costs would add an additional \$5.00 per MW/h.

There was no mention of these owner costs at the January 25 LAC meeting and if they were included in the estimated \$45 to \$65 LCOE.

Further, these are costs averaged over 40 years that will be paid by ratepayers. There is no information regarding how the rates may be affected year by year over the life of the project.

There is no information about the basis of these costs and what happens if, after 40 years (or even before), things don’t work out as expected. _

https://www.iaea.org/NuclearPower/Downloadable/Meetings/2015/2015-08-25-08-28-NPTDS/DAY2/1._NuScale_Power_SMR_-_Simple,_Safe,_Economic.pdf

8. NuScale has not received approval from the Nuclear Regulatory Commission (NRC) of its SMR Design Certification Application and does not yet have the the results of the final technical and regulatory decisions that will impact the costs to fabricate, construct, and operate the 12-unit proposed reactor. Therefore, it is hard to see how NuScale can provide a realistic estimate on the costs over the long term. The current schedule for the Design Certification Application (DCA) indicates that the final Safety Evaluation Report (SER) will be released in the Fall of 2020. After that the NRC will commence the DC Rulemaking. Therefore, it will not be until 2021 or 2022 before the NuScale SMR Design Certification Rulemaking is complete. The Combined Construction and Operation License Application (COLA) cannot be submitted until after that process is complete. That is about 4 years from now, not 2, as expected by UAMPS. _ (<https://www.nrc.gov/reactors/new-reactors/design-cert/nuscale/review-schedule.html>)

9. UAMPS and Los Alamos County mention US Department of Energy (DOE) participation and financial support. Funding has already been provided by the DOE, and more is expected. It would be more honest for

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UAMPS and Los Alamos to replace the “DOE” with “US Taxpayer,” since the support and funding from the DOE is support and funding that comes from US Taxpayers. The DOE does not make its own money; it is a government entity, funded by US tax dollars. LAC Council should discuss and consider why it is OK for US Taxpayers to subsidize the electrical bills of the Los Alamos County ratepayers.

10. There are over 4,400 abandoned uranium mines associated with the federal atomic weapons program. Yet, the DOE has not provided any funding for their remediation and reclamation. Wouldn't federal tax payer dollars be better spent on reclamation of the Moab uranium mill, abandoned uranium mines, Hanford, and other DOE facilities, rather than subsidizing the electrical bills of UAMPS-member ratepayers?

11. The NuScale SMR is a new technology. The proposed 12-unit SMR operation in Idaho will be a first-of-kind reactor technology. That means there are a number of technical, operational, economic, regulatory, and other aspects of this project that are still being worked out. Every week the NRC meets with NuScale to discuss their Design Certification Application and NRC Requests for Additional Information (RAIs) and NuScale RAI responses. These meetings are open to the public. The NRC posts these meetings 10-days in advance on the NRC meeting schedule (<https://www.nrc.gov/pmns/mtg>); anyone can join via a phone bridge line. I have listened to several meetings and will continue to do so. I am not aware of any representative from UAMPS or UAMPS member utility or member government ever trying to educate themselves by listening to these meetings and asking questions of the NRC.

12. NuScale is proposing various technical and regulatory changes to the NRC that would reduce the cost of the construction and operation of the SMR. One way to reduce to costs is to reduce the number of reactor operator personnel; another is to reduce the size of the Emergency Planning Zone (EPZ). NuScale would like to see the 10-mile EPZ reduced to the reactor site itself, so there would be no need for emergency planning in Idaho Falls outside of the Idaho National Lab reactor site. NuScale gave the Los Alamos County Council the impression that the NRC has approved this proposal. However, the NRC has not approved this proposal, but is considering a Rulemaking to change the EPZ regulations. The NRC issues a draft Regulatory Basis for the Rulemaking in April 2017 (82 Fed. Reg. 17768-17770; April 13, 2017: Rulemaking Docket ID NRC-2015-0225). Any modifications to the EPZ rules will likely end up in court.

13. If the UAMPS SMR were to be constructed at the Los Alamos National Lab, rather than the Idaho National Lab, and NuScale had its way, there would likely be no emergency planning beyond the boundaries of the reactor site. That would mean that the usual emergency responders, medical personnel, and government agencies in Los Alamos County would not be involved in emergency planning for the SMR site. How would that sit with the citizens of Los Alamos County and the surrounding area? This is something that LAC must consider.

14. The more time, resources, and money that Los Alamos County and the ratepayers invest in the UAMPS SMR, the harder it will be to step back and reconsider its investment. It would be harder to justify the funds already spent and committed.

15. One of the questions to UAMPS from the Council was about the source of uranium for the UAMPS SMR. I don't know if that was out of concern that the uranium would come from a foreign country, such as Russia, instead of the United States. Recently, there has been publicity about US uranium industry concerns about the fact that most of the uranium for reactor fuel in the U.S. comes from foreign countries that are not democracies.

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This concern has been expressed by Energy Fuels Resources (USA), the owner of the only operating uranium mill in the U.S. Energy Fuels is a Canadian company, as are most of the companies that own or have major interests in the U.S. uranium industry. It is likely that uranium from Russia will be used of this project. Recently, there was an fatal accident near Farmington, New Mexico, involving a truck carrying a cylinder of uranium hexafluoride that originated in Russia and was on its way to the AREVA's Richland, Washington, fuel fabrication facility. Apparently, AREVA will be supplying the fuel for the UAMPS SMR.

16. For anyone thinking that supporting the U.S. uranium industry is a good idea, you should also consider that Energy Fuels want to develop a large uranium mine on Mount Taylor, which is sacred to the Diné and to New Mexico Pueblos. The US Forest Service has already determined that the 65-acre mine would have an adverse impact on groundwater and cultural resources. The Roca Honda Mine would be very destructive and harmful, as have all of the uranium mining on the other side of the Jemez Mountains. The Roda Honda ore would be shipped to the White Mesa Mill, adjacent to the lands of the White Mesa Band of the Ute Mountain Ute Tribe. Another company has proposed a new uranium mill in New Mexico to process ore from the Mount Taylor Mine, which has been closed for decades. The federal government has spent millions of dollars to cleanup defunct uranium mines and mills in New Mexico. There are still unreclaimed uranium mines and continued contamination of groundwater in the Grants Mineral District from the legacy of uranium milling. Millions have been spent to compensate uranium mine and mill workers. LAC should take a hard look at the impacts of uranium mining in New Mexico from historic and proposed operations.

17. There is no discussion in the Executive Summary of the availability of relevant documents in a timely manner, open meetings, audio and video access to meetings, availability of the minutes for the full meeting. LAC should assure that all relevant documents be made readily available in a timely manner.

18. The Executive Summary references several documents associated with the Project Management Committee (PMC). These include the Budget and Plan of Finance, Development Agreement and other Project Agreements, Economic Competitiveness Test, Bonds, Project development and feasibility, project oversight. There is not much information about how these documents will be developed and opportunities for input by the ratepayers, based on a transparent and open process.

19. There is no specific information about the Economic Competitiveness Tests. There is no information about what, exactly, those tests will consist of and how the PMC will assure that this is an independent and un-biased analysis of various aspects of the economic competitiveness of this project.

20. The Executive Summary states that the "Budget Plan of Finance" for the initial phase of the Licensing Period will be approved by the Participants' governing bodies at the same time as the Power Sales Contracts are approved. Yet, that document has not been made available to the public, and maybe not to the Council. Where is a copy of the "Budget Plan of Finance" for the public and ratepayers to review and comment on?

21. The Executive Summary should have included more detailed information about the Participant Withdrawal and Reduction Rights during the Licensing Period, possible reimbursements associated with Participant Withdrawal or Reduction, estimates of the increase in financial commitments if other participants withdraw or reduct their participation, and relevant dates. The precise terms of any withdrawal are missing from this discussion. Each participant, their governing bodies, and ratepayers should have complete information regarding the participants rights, dollar amounts, dates, risks related to each development step, and other

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relevant information.

22. The Executive Summary provides sketchy information regarding the Financing for Development Costs. There is no information about the amounts available under cost-sharing agreements, grants, etc. There is scant information about the bank and bond financing and repayment obligations over time.

23. There is no information on the qualifications of UAMPS to oversee a nuclear reactor project of this size and complexity, when UAMPS and its members have no experience with financing, licensing, constructing, operating or decommissioning a nuclear reactor, yet alone a first-of-kind reactor design.

24. The LAC Council should consider the impacts of an SMR on the citizens of Idaho and their environment. LAC Council should compare these impacts with the impacts of other kinds of energy generation, such as wind and solar. The TVA Clinch River Nuclear Site Early Site Permit (ESP) Application for an SMR project addresses the Environmental impacts associated with different SMR designs, including NuScale design.

<https://www.nrc.gov/docs/ML1800/ML18003A471.html>

The Environmental Report, Part 3, Chapter 3 discusses Plant Water Use (Section 3.3) Radioactive Waste Management (Section 3.5), and the Non-radioactive Waste System (Section 3.6).

<https://www.nrc.gov/docs/ML1800/ML18003A447.pdf>

Part 3, Chapter 5, Section 5.4, discusses Radiological Impacts of Normal Operation.

<https://www.nrc.gov/docs/ML1800/ML18003A453.pdf>

The TVA Application contains other information about the impacts to the environment and health and safety of the community associated with the proposed SMR project. This information should be given full consideration by the LAC Council in its decision-making process.

25. In sum: The LAC Council, the citizens and ratepayers of LAC, and other interested parties do not have the information necessary to make an informed decision on LAC's continued participation in UAMPS SMR project. If there are problems, it is the ratepayers who will pay, not LAC. I urge you to reject continued participation in the UAMPS SMR Project and work to develop electrical generation capacity that does not carry the significant financial risks and significant risks to public health and the environment as the UAMPS SMR Project surely does.

Sarah Fields

_Program Director

_Uranium Watch

_PO Box 344

_Moab, Utah 84532 _

435-260-8384

4 Supporters

Greg Kendall inside DENVER STEELS (registered)

February 15, 2018, 12:26 PM

I would like to see the Council authorize an independent outside cost / benefit / risk analysis that is not involved with the DPU to see if this project makes sense for a Small Community in Northern New Mexico. I am concerned that this is an Engineering driving project. We need an independent analysis to determine if the

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project makes sense for us and if the risks are acceptable for a small community with limited funds. I don't believe there are nuclear business experts employed by the county and we need to hear from some before we get involved in a huge project of this magnitude and potential risk. If we hear from independent outside experts that this is a good deal and risk for us then maybe go for it.

Name not shown inside NORTH MESA (registered)

February 13, 2018, 4:53 PM

Los Alamos County should not continue participation into the next phase of the Carbon Free Power Project.

The UAMPS Carbon Free Power Project is an advanced technology development project. There are no Small Modular Reactor (SMR) products in existence today and so no operational experience in their use by electric utilities. The project therefore has considerable risk of unanticipated financial, technical, schedule and operational problems, which would increase its cost and/or delay or prevent its completion. As a small county and utility, LAC and DPU should not take on those risks, which would be shouldered by Los Alamos' residents and businesses. Los Alamos County should withdraw from the UAMPS Carbon Free Power project. Instead, LAC and DPU resources should be directed to meeting the County's clean energy goal with existing, deployed technologies for which reliable cost estimates can be made. Utility-scale solar (photo-voltaic) plus battery storage systems continue to be deployed in multiple states, and are particularly favorable in locations such as Los Alamos with a large proportion of sunny days. These systems can provide daytime power production and time-shifted electricity delivery during peak usage hours after sunset that could meet a large portion of the County's electricity demands. Costs for new utility-scale solar plus battery storage installations have been dropping steadily and are projected to continue to fall. For example, Colorado's Xcel Energy utility received responses to a recent RFP that include 87 bids for utility-scale solar plus storage projects with a median Power Purchase Agreement cost of \$0.036/kWh. This is much less than LAC/DPU is currently paying for coal-generated electricity, and well below the cost projections for SMR-based power generation. LAC and DPU should explore how utility-scale solar plus battery storage could be folded into the county's electrical generation mix as a major step to meeting the County's clean energy goal well before the 2040 date, and potentially reducing electricity rates for DPU's customers.

2 Supporters

Name not available (unclaimed)

February 8, 2018, 11:09 AM

As a prestigious research laboratory we should be leading by example in the way of environmental friendly power solutions. I think it goes without saying Nuclear energy should be one these technologies, and of course, we should eat our own food as the saying goes.

Jill Beck inside EASTERN AREA (registered)

February 7, 2018, 5:26 PM

As a whole, Los Alamos County residents are a carbon conscious and do our part to conserve our energy usage. Why should we shoulder the financial burden of a Carbon-free power project? The major user of most resources is the Los Alamos National Laboratory, let's not lose sight of that.

Nicholas Thompson inside EASTERN AREA (registered)

February 7, 2018, 9:58 AM

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I think the County should continue participating in the next phase of the CFPP. We'll need a mix of all low carbon sources of energy to fight climate change including nuclear.

1 Supporter

Name not available (unclaimed)

February 5, 2018, 9:55 PM

Although I can see the attraction of a base load 24/7/365 (potential) electric power source, the risk for Los Alamos County is just too large to continue to pay in to the UAMPS project without major support from DOE and LANL. The reactor itself seems much safer than current nuclear plants, but whether or not the \$65/MWhr cost cap guarantee can be maintained in the future in the event that the cost balloons up or Fluor doesn't sell enough of these plants around the world to match their profit calculation is a huge gamble which is not appropriate for a small community like Los Alamos to assume with our very limited financial resources.

Nickolas Stevens inside ASPEN - WALNUT (registered)

February 5, 2018, 5:50 PM

I think there is a lot of DOE land that is prime for solar. We already have plenty of nuclear waste with no where to put it, why make more. There are other 0 carbon energy options that should be considered.

1 Supporter

Nick Mezins inside DOWNTOWN RESIDENTIAL S (registered)

February 4, 2018, 4:34 PM

Nuclear is the only sensible energy solution for the near future. All others pollute or are impractical at this time. Los Alamos, let's do it!

1 Supporter

Richard Nebel inside NORTH MESA (registered)

February 3, 2018, 11:52 PM

I'm concerned about the cost/risk of these modular reactors. Most costs for nuclear power plants are the capital investment costs. The past strategies have been to mitigate these costs by economies of scale. This proposed concept goes the opposite direction with multiple small units.

Also, my understanding is that the number of people that it will take to operate a 50 MWe unit is about the same as it is for a 1000 MWe unit. Consequently, the operating costs per MWe for these units will likely be higher for these modular units than they are for conventional nuclear plants.

Finally, Exelon is the largest nuclear utility in the US. Most of their units were bought for 5 cents to 10 cents on the dollar. Consequently, their costs are almost completely operating costs. Even with that enormous advantage, they are only marginally competitive with natural gas and subsidized wind power. I am skeptical that this proposed system can produce economically competitive power.

Name not available (unclaimed)

February 3, 2018, 8:50 PM

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Stop increasing the utility rates so you can go out and buy more facilities we don't need. We already pay more than surrounding areas for our utilities.

Stop wasting resident money! We don't need to replace all the utility meters, and we don't need to install nuclear reactors to produce electricity in this tiny county. We're sick of paying for the council's pipe dreams.

Name not shown inside WESTERN (registered)

February 3, 2018, 6:20 PM

Yes. Although I don't believe Carbon was affecting the Earth on a large scale.

Nuclear power has only one down side it's _ dun ta da da!!!_

NUCLEAR WASTE... Steve harshman.

George Chandler inside EASTERN AREA (registered)

February 2, 2018, 5:48 PM

This is a really neat concept that should be developed - by somebody else. I'm not sure just why UAMPS has chosen this path to development, because other small reactor concepts are being developed in more conventional ways. UAMPS is attempting to convince these municipal utilities (like ours) that the technology is "tried and true." The fact is the first reactor of this type is under development at Savannah River and has not been completed, so it's neither tried nor true. They built a 1/3 scale electric-grid-powered model in Corvallis with a prototype control system, They tout this as a prototype but it prototypes nothing of importance. It doesn't have the nuclear module, it only has one system with six screens to control 12 modules, and the "prototype" control system is now 15 years old and will have to be done over by the time this thing comes on line in 2025 (if it meets the schedule). They have not set up the multi-contractor industrial scale fabrication system needed to produce these modules by the dozen. This is way too early to be bringing in municipal utilities, which another commenter pointed out do not have the talent to judge a project like this. You can discover this for yourself by the shortage of critical thinking about this project by our own utilities department.

Name not shown inside WESTERN (registered)

February 2, 2018, 5:16 PM

I would be most interested in investing in clean energy: solar, wind, water storage. Nuclear power looks good but the dire potential consequences are not acceptable to me

Lynne Fischer outside Community Boundaries (registered)

January 30, 2018, 4:25 PM

I do not think that the County of Los Alamos should continue its participation into the next phase of the Carbon Free Power Project. Nuclear energy, while carbon free, remains a dangerous form of energy. Not only is it vulnerable to extreme geological events (earthquakes) but the waste from these plants remains toxic for centuries. Storing nuclear waste poses a continuing threat to communities and water systems. We have seen the proof of this, it is not hypothetical. Finally, with the price of solar and wind energy dropping drastically, it is foolish to invest anymore time and money into an energy source that is so expensive and so dangerous.

Name not shown inside DENVER STEELS (registered)

January 29, 2018, 11:48 AM

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We should be pursuing solar and wind renewable energy sources. The byproducts are easier to recycle than spent nuclear products are.

Chris Horley outside Community Boundaries (registered)

January 29, 2018, 12:12 AM

After reading some of the comments, I am surprised at the number of misleading statements given. For example, the Tucson solar + battery cost cited as \$45/MHr is based on significant subsidies. The article referenced states the real cost is closer to \$90/MWh. The next least costly solar + batter power generation was \$110/MWh for a 28 MWh solar installation. Both these installations are NOT based on supplying base load power (continuous output) as would be a nuclear plant. The referenced solar project with a real cost of \$90/MWh will have a 100 MW solar farm with a 30 MW 120 MWh storage facility. Solar farms are rated at peak power production. That would always be at local high noon even for tracking systems. Net total power in a day for a solar farm can range from a peak of 30% down to 2% for a cloudy day. Compare this to a 20 MWh nuclear plant operating 24 hrs a day generating a total of 480 MWh.

I would also like to point out that NO human developed energy production is carbon free. Carbon is emitted in the design, the planning and funding cycles, the fabrication, the plant construction, testing, and the operation and maintenance phases of a project. That goes for wind, solar, nuclear, gas, coal etc.

As far as local jobs with renewables, the US manufactures less than 5 percent of the global solar energy panels and they are 10 to 30 cents per watt higher than imports. Most domestic solar projects use foreign made panels, As far as wind turbines go, again, the same manufacturing story. As far as environments impacts go, a 20 MW wind farm will require 1200 to 1600 acres, depending on average wind speed. size of turbines and terrain. They are noisy neighbors and are also destructive to all night flying creatures like owls and bats. For solar, a 20 MW farm will require 12 acres to 18 acres plus the land and buffer zone needed for safe battery storage.

How about safety? Nuclear energy is bashed about how unsafe it is. Here are the deaths rates for the gas and oil industry:In the US alone:

2003 – 85 fatal injuries
2004 – 98 fatal injuries
2005 – 98 fatal injuries
2006 – 125 fatal injuries
2007 – 122 fatal injuries
2008 – 120 fatal injuries
2009 – 68 fatal injuries
2010 – 107 fatal injuries
2011 – 112 fatal injuries

Now let us include the environmental oil spill damage to marine life and reef die off from carbon emissions. Offshore oil spills will continue to happen with rig accidents and tanker accidents. Carbon emissions from transportation now exceeds that from electrical generation.

For wind farms, the fatality rate is:

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Number of fatal accidents: 136

By year:

Year Before

2000 00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17

No. 24 3 0 1 4 4 4 5 5 11 8 8 15 16 4 2 7 6 9

For coal, death statistics in US are:

2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 TOTAL

....23.....47.....34.....30.....18..... 48....20.....20.....20.....16.....12.....8....14.....0.....310

Ok, let's look at nuclear. Since 1955, there have been 13 fatalities at US nuclear plants. No civilian deaths. Guess anti nuclear folks do not care about the risk others take to power their lights and fuel their cars and jets. If they did, they would endorse safer alternatives. This is not to imply we should not pursue solar and wind sources, but they are not capable of supplying all of our energy needs all of the time in all seasons, locations and latitudes.

Bottom line, be wary of non-technical energy folks quoting energy statistics and risks.

3 Supporters

david hayden inside WHITE ROCK (registered)

January 28, 2018, 9:18 PM

Los Alamos County should pursue all technologies that keep energy costs low. There should be no preference to Carbon Free, only abundant sources of energy.

1 Supporter

Gene McCall inside BARRANCA MESA (registered)

January 28, 2018, 8:49 PM

This is development project, and the county has no business funding it. Lots of things can go wrong. Why is it that the councillors seem to believe that they are financial wizards when they discuss an inane topic, such as improving the economy of what is, already, one of the richest counties in the entire nation, but they cannot think of relevant questions for a topic like this? How about: How many reactors have you built? How many of your employees have participated in a reactor construction project? Do you have any experimental results that support your design principles? Who are your main technical people, and what are their credentials? What are your construction milestones, and when do you intend to reach them?

OK, it sounds like a good idea, but no member of the council, and no member of the county staff is qualified to judge. Who will determine whether adequate progress is being made as work progresses? What is the fallback option if the program fails?

Council, please, stick to programs that are appropriate for benefiting the citizens of a small county. And, maybe, even, things that you have a chance of understanding.

1 Supporter

Andrew Fraser inside BARRANCA MESA (registered)

January 28, 2018, 6:46 PM

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Los Alamos County should not continue its participation into the next phase of the CFPP.

The US should continue developing nuclear power technology, but I think Los Alamos County can save money by waiting and watching technology develop before committing to buy. Since the main cost of nuclear power is capital, a nuclear plant should run all the time. That is a poor match for solar and wind power which are likely to grow.

Doing a quick Google search just now yielded <https://arstechnica.com/information-technology/2017/04/the-economics-of-energy-generation-are-changing-more-metrics-favor-solar-wind/> which forecasts \$56.50/MWH for combined cycle gas. I bet that combined cycle gas generating plants will set the market price over the next few decades. I suspect that the proposed CFPP small nuclear project will end up costing tens of dollars more per MWH than the market price over the decades of its life.

We use between .5 and 1.0 MWH per month at my house. If I am right in my guesses, the CFPP will cost us something like \$10 or \$20 per month. That's OK with me. I think this is a judgment call for the BPU and the Council. It is not a question of principle.

2 Supporters

Name not shown inside WHITE ROCK (registered)

January 28, 2018, 6:34 PM

Yes! Absolutely. Los Alamos should be at the forefront of alternative energy sources. We need to counter the anti-science policies that are so prevalent today. Let's do our part.

3 Supporters

Greg Farrell inside DOWNTOWN RESIDENTIAL S (registered)

January 28, 2018, 5:14 PM

LAC is blessed with abundant solar and wind resources. Why not invest in these clean technologies while researching the advancing storage options? These are local power generation options that will provide local jobs and a boost to the local economy. Solar and wind options are local and safe, the same can not be said for SMR.

Thank you,
Greg Farrell
Los Alamos

2 Supporters

Steve Tobin inside NORTH MESA (registered)

January 28, 2018, 2:34 PM

Carbon Free Power Project (Small Modular Nuclear Reactors)

Should the County of Los Alamos continue its participation into the next phase of the Carbon Free Power Project?

Stephen J. Tobin
Los Alamos

January 27, 2018

Dear Board of Public Utilities and County Council members,

I am writing to give some input on the issue of Los Alamos County's involvement in the Small Modular Reactor (SMR) Project.

Background thoughts:

- I very strongly support Los Alamos County's plan to shape our energy usage such that we will be net carbon zero by 2040!
- Vital data needed as a backdrop to this conversation can be found at the following link: <https://www.lazard.com/perspective/levelized-cost-of-energy-2017/>. I recommend the short video summarizing the research of the Lazard team.
- I have a Ph.D. in Nuclear Engineering and have worked in nuclear nonproliferation for nearly two decades.
- For a range of reasons, in many parts of the planet, nuclear reactors are likely to be the best, if not only, practical power supply to replace fossil fuels. The transition to SMR from the traditional larger scale nuclear installations currently common in the world (and for which the Lazard cost estimate applied) has the potential to significantly lower the cost of nuclear and thus increase the use of this non-carbon emitting energy option.
- Yet, Los Alamos County is not like most of the world in the following relevant ways:
 - o We have high quality solar in our county and nearby counties
 - o We have high quality wind in our state
 - o We have the potential for pumped water storage in our backyard
 - o We are part of a large country, giving us the ability to create a large electric grid, that minimizes the intermittency of our abundant and cheap wind and solar supplies.

Regarding the SMR Option for the county:

- I am very skeptical that continuing with the SMR project will prove to be a wise use of county funds for the following reasons:
 - o Risk: I applaud the SMR team for reusing mature technology and for transitioning to a factory based approach in fabrication, but we cannot fool ourselves. This is not a proven system. I have no doubt it will work, eventually, but this project has, in my estimation, a large probability of being over budget and late.
 - o The DOE, possibly in collaboration with international partners, should be funding this completely. Why are 30-some small communities being asked to fund an unproven system? If this project is not directly within the mission space of the DOE, what project would be? I see the fact that the location of the project is on DOE land as a partial recognition of this reality.

What is still needed to inform this decision:

- The decision facing the County Council is one of choosing among options, or at least it should be. At the meeting in the Council's chambers on Jan. 25th, I recall an explanation being given as to why we do not have a cost estimate to compare to. As I reflect on the decision the council faces, the absence of this comparison weighs large. Why is it not prepared? Specifically, we need to know:
 - o How much would an industrial solar installation cost at various sizes (5, 10, 15 ... 50 MW)?

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- o How much would a storage system cost at various sizes?
- :clubs: Pumped water storage
- How much is the dual use potential with the ski hill of pumped storage worth to the county?
- What is clear from the cost analysis (Lazard) and the climate change reality, the percentage of wind and solar will increase on the NM grid. How much is it worth to the county to be able to buy power when it is cheap and sell it when it is expensive? Will such ability be factored into a cost assessment?
- :clubs: Lithium ion batteries
- :clubs: Others?
- o Land is expensive and scarce in LA County; why not collaborate with some of the area pueblos? The cloud cover is less for the valley, the land is cheaper, LANL has always sought to collaborate with the local pueblos. This seems like a win-win.
- o How much would participation in a wind plant in New Mexico cost? California power companies are investing in New Mexico wind. Why doesn't Los Alamos County?

Thank you for your time,

Stephen J. Tobin

8 Supporters

Coleen Meyer inside ASPEN - WALNUT (registered)

January 28, 2018, 1:47 PM

Yes, we should remain on the path to becoming carbon free by 2040 (at the latest). I don't think the small nuclear reactors are the way to go, but we need to get there sooner rather than later. This is an environmental issue that is not going away; it's not a fad. Opinions and politics do not change facts. I would like to see LA County move away from all fossil fuels to more solar power, which has been proven to work very well in this county. If the county actively moved to make solar a reality rather than to subtly oppose, the county would be in a much better energy position. We also need to be on the cutting edge of incorporating next generation battery technology as that becomes available.

3 Supporters

Donald Machen inside EASTERN AREA (registered)

January 28, 2018, 12:59 PM

Yes and consider what will happen should LAC not pursue the SMR design and what will happen to the world should we let the <current> administration's policies stand. Climate change and the extreme weather patterns that we have experienced will just get worse and worse. Carbon neutrality is essential. The design of the SMR has been approved by the NRC as a design that is safe will not melt down in case of a loss of cooling, for example. The LAC must have a power source that replaces the coal burning source in Farmington that will be shut down by PNM and others. There is nothing on the horizon, other than battery energy storage that can supply a firm power source over a 24 hour day. The batteries are not yet grid power capable and are still in the development stages for the use of renewable energy sources to be a possibility. The FER Committee recognized this conundrum and selected the SMR as a firm power potential in their

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conclusions, giving LAC, AND OTHERS, the ability to become carbon neutral. By following and supporting the SMR development, LAC can be among the leaders in the US in recognizing the climate science, climate change and doing something about it. LAC by all means needs to continue the support of this technology.

1 Supporter

Susan Barns inside DENVER STEELS (registered)

January 27, 2018, 1:31 PM

Short answer: No, I don't think so.

Longer answer: Since nuclear energy is not my field, I will not comment on the technical or safety aspects of the SMR. I am impressed with the nuclear expertise present amongst BPU members, and defer to them to address these issues.

My concerns are business, economic and environmental in nature. In short, having paid attention to this matter for over a year, I am concerned about the numerous risks and unknowns of this project. At this time, I feel it may not be the most prudent way forward to meet the FER goals, and before we throw another \$0.5 to 3.6 million(!) at it, I'd like to think that we have carefully considered the issues and alternatives.

Here are my top concerns and comments:

- We may only be getting 16 MW of power (of the approx. 45 MW we need to replace from coal) from the SMR. Is it worth the cost and hassle? What other options are available?
- Regarding the \$0.5 to \$3.6 million COLA payment:
 - o What will be the cost to LAC if there is no "support from the DOE in the form of a grant"?
 - o What else could we do with \$0.5 to \$3.6 million? Encourage energy efficiency and conservation? Put in a large water line up the Ski Hill (instead of/in addition to planned water line for snowmaking), to provide pumped energy storage to firm solar power? Community solar gardens? Fund Distributed Energy Resources Management System (DERMS)?
- Levelized Cost of Energy: projected at \$45 to \$65 /MWh
 - o SMR "Has the potential to go as low as \$45/MWh" Is this really a good deal for LAC ratepayers? That price has already been met in Tucson for solar + battery storage (<https://www.utilitydive.com/news/how-can-tucson-electric-get-solar-storage-for-45kwh/443715/>). Costs for renewables continue to drop. A recent RFP for solar + storage in Colorado returned median bids of \$36/MWh (<http://www.sanjuancitizens.org/wp-content/uploads/2018/01/30-Day-Report-2016-ERP-16A-0396E-Public-Version.pdf>). Who knows how low it will be by 2027 when the SMR may come online? Are we committing ourselves to paying a higher rate than necessary?
- Environmental, health and social justice issues of uranium mining and radioactive waste disposal. How do these compare with impacts from renewable energy options? UAMPS analysis shows lifetime greenhouse gas emissions to be higher for nuclear than for solar energy generation.
- Miscellaneous, niggling doubts about this unprecedented, complex project coming on line on time, within budget, etc.

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One last thought: Implementation of a solar + storage approach to meeting FER goals is clearly challenged by land availability in LAC. However, a recent development that might be worth pursuing is partnering with surrounding Native American nations which have large amounts of land available. The Navajo and Picuris nations have already installed PV arrays that not only serve tribal needs, but also provide solar energy for sale to surrounding communities (<http://www.daily-times.com/story/news/local/four-corners/2017/07/30/navajo-tribal-utility-authority-opens-first-large-scale-solar-farm/493090001/> http://www.santafenewmexican.com/news/business/picuris-pueblo-goes-solar/article_b231e7b4-35b5-5ad0-b8cb-5bc3bb737051.html). Such an arrangement could not only serve our needs, but also provide jobs and economic independence in Northern New Mexico (better than energy generation at INL, where jobs, taxes, etc. go into the ID economy.) (Also, the PR aspect of supporting local, Native American renewable energy generation vs. a nuke plant might be of interest to LAC...)

Finally, I do want to commend the DPU and BPU for their work on finding ways to implement the FER recommendations! This is an incredibly important, and incredibly complex, process with many interrelated parts, risks and unknowns.

With thanks—
Sue Barns

6 Supporters

Carolynn Sisneros inside ASPEN - WALNUT (registered)

January 27, 2018, 12:36 PM

No. Look at the long term picture. Nuclear energy may be efficient now but the long term effects are not worth the short term benefits. Reducing consumption, using non-pollutants (wind, solar) or recyclable or reusable mediums (battery storage), is a better choice for now and the future. In the event of a disaster, nuclear pollution's effects cannot be undone. Haven't we learned this yet? Please vote NO.

2 Supporters

Arthur Dillon inside NORTH COMMUNITY (registered)

January 27, 2018, 11:35 AM

NO ! I do not want "carbon free" anything pursued. This is another ignorant and useless "feel good" activity. Can you say "plastic bag ban"? I want Los Alamos County Utilities to engage the least expensive, most reliable energy sources. Period. I do not want them making political statements with my hard-earned dollars.

1 Supporter

Harry Flaugh inside DENVER STEELS (registered)

January 27, 2018, 11:26 AM

Absolutely!

2 Supporters

Name not available (unclaimed)

January 27, 2018, 11:05 AM

Carbon Free Power Project (Small Modular Nuclear Reactors)

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We absolutely should participate in the development of nuclear power for a long term element of carbon free electrical power.

Name not available (unclaimed)

January 27, 2018, 10:09 AM

I think we should invest more knowledge, education, money and effort in solar and wind power.
