Comment #0008
Badger Mountain Project
Docket #210747

From: CEASE <cease2020@aol.com>
Sent: Monday, November 15, 2021 8:33 AM
To: CEASE <cease2020@aol.com>
Subject: solar information from C.E.A.S.E.

External Email

To Whom It May Concern; our organization C.E.A.S.E. citizens educated about solar energy would like to express our concerns regarding the impacts of solar facilities on our county. there is a limited amount to language to protect the county and its citizens from solar facilities encroachment. there are many issues which must be discussed and must addressed
ref:library.municode.com/wa/klickitat...klickitatcounty.org/index to final energy overlay zone & eis files

the lithium ion batteries which are capable of storing many mega watts of electrical energy. the batteries can spontaneously combust due to thermal runaway that will cause adjoining batteries to explode and can release deadly toxic gases. electrocution is also a possible danger. solar panels can not be turned off when the sun is shinning they continue to produce electricity and if there is a fire in the solar farm. many citizens can be injured or killed from a fire or explosion. this problem places our un-prepared un-equipped un-trained firefighters in harms way. in either scenario who pays the medical cost if someone injured ? if someone is killed who will be sued ? it is doubtful that the foreign energy company worth billions and full staff of attorneys will make sure the corporation doesn't pay a dime.. these energy companies should provide their own fire services. the 2019 wind turbine fire which engulfed thousand of acres of land. the suppression was paid for by the county and state. the billion dollar corporation didn't pay a dime. sound fair ? ref:breitbart.com/huge solar farm.. ref: greentechmedia.com/mcmicken solar farm fire ref; morris illinios lithium ion battery fire

solar panels contain many cancer causing chemicals: lead, cadmium, nitrogen trifluoride nf3,perfluorinated alkylated pfas, cadmium telluride, copper indium selenide, cadmium gallium selenide, hexafluoroethane, polyvinyl fluoride. these panels at the end of life which the federal trade commission states is 15-20 years can not be disposed of in a landfill. longi the world largest maker of solar panels from china only guarantees their panel for 12 years. california and many countries already consider them e-waste which requires special recycling. our state does not have a facility to recycle them. washington ecology dept does not know about the toxins in solar panels yet they play a big part in permitting solar sites..if disposed of improperly and the glass is broken that is when the chemicals are released and starts to contaminate the environment. this will sicken or kill citizens. currently this problem is not being addressed and will become the future environmental clean up. ref;forbes.com if solar panels

the federal government collects taxes from US citizens. some of that money goes to the department of energy. they in turn "loan" that money to energy companies some worth billions (such as the iberdola company from spain backing the lund hill solar farm net worth $64 billion). many have received the "loan" started and possibly operated a solar farm and then filed bankruptcy never paying back the "loan" and disappear, only to start all over again under a different name. this is a misappropriation of our tax money. very few have been prosecuted. little if any money recovered. they leave the toxic mess behind for you/me to clean it up. they receive sale tax exemption through fund 626, when they can not sell their electricity we must pay them. $2.7 million in 2013. the washington dept of revenue allows them to depreciate their personal property 8.5% per year. we the citizens must make up the difference. sound fair
? ref; longmont ,colorado ref: money.cnn.com/obama's alternative energy bankruptcies...greentechmedia.com/rest in peace ... abcnews.go.com/green firms get fed cash give excs bounes and fail

solar energy is unreliable: no sun-no electricity. inefficient: goldendale wa. receives 189 days of sunshine and a average of 5.4 hours per day. so on cloudy, rainy, foggy, snowy days no electricity is generated. if the solar panels are dirty due to blown dust their efficiency drops dramatically. they are about 14% efficient ,produce about 1.5% of all the electricity in the grid. cleaning is required which uses millions of gallons of our ground water. when electricity is not being generated other forms of electrical generation is required which increases the cost to the consumer. solar electricity is more costly than nuclear ,natural gas or coal. solar farms requires vast areas of land to produce small amounts of electricity. taking that land out of crop production is land needed to feed Americans. if our farmland does

not produce food for Americans we must import food from countries that use harmful chemicals on their plants which USA band years ago. one columbia dam turbine can provide 156 Mega watts night/day rain/shine 24-7-365. for solar to produce 156 mega watts it take 1781 acres (lund hill solar bickelton wa) but it can not produce electricity 24-7-365. another short coming of solar. goldendale wa has a PSE natural gas plant. sited on 13 acres produces 277 mega watts 24-7-365. you and the governors plan is to abandon all these in place reliable efficient means of electrical generation for solar ?? you and he will be siting in the dark and cold when solar can not produce like texas. 100% carbon free environment is impossible to achieve you will never eliminate fossil fuel. why isn't the governor home on bainbridge powered 100% by renewables ? why isn't the capitol powered by 100% renewables ? why isn't your office powered by 100% renewables ? why aren't solar facilities being built on the west side of the state ? reason; you don't want them in your county near your homes and places of employment. do as i say not as i do. ok to force solar on the citizens on the east side of the state. out of site out of mind. do your job protect all the citizens.

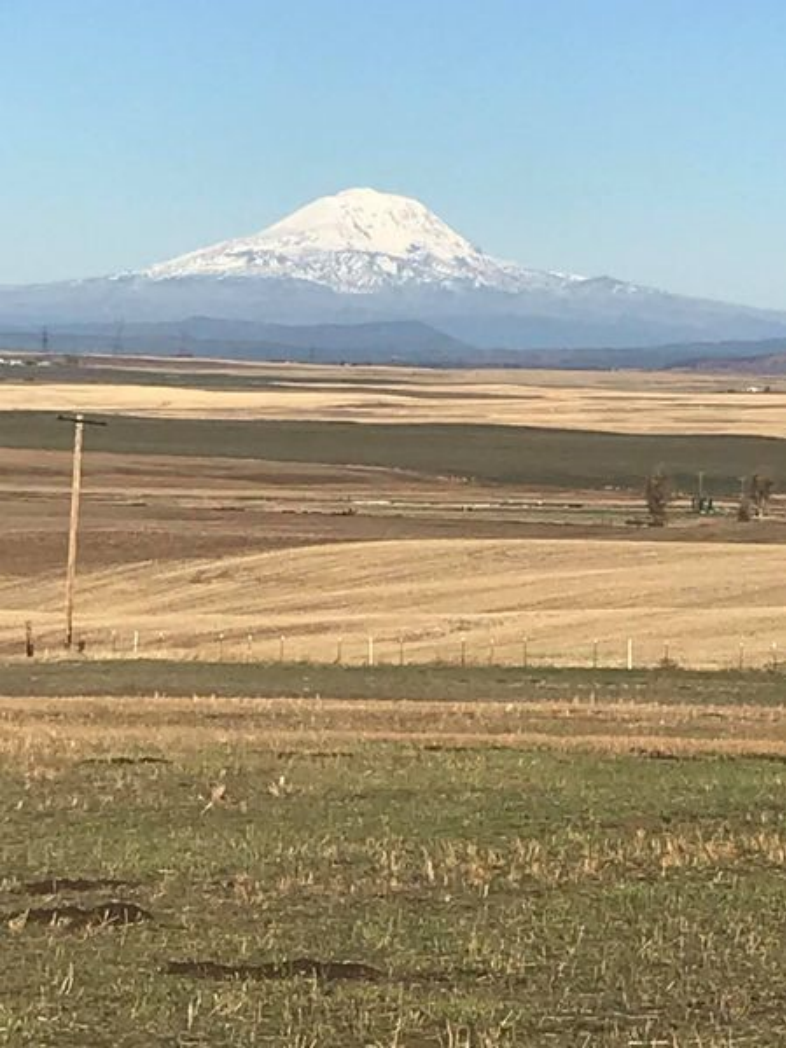
these energy companies prey on counties like ours. their corporate attorneys read our ordinances and realize there is nothing stopping them from getting their way here. we can not allow them to continue to take advantage of us. we need to control the growth of solar farms in a way that is compatible with the surrounding area, meets a land use balance, not be concentrated in one area, limit the size of each solar farm, provide a buffer zone between solar cells, protect the environment, wildlife, wildlife habitat, ecosystem, ground water, solar farms will destroy the natural beauty of our county and the views loved by all. solar farms are ugly to everyone except to those profiting from them. they will ruin nearby home values (our biggest investment), make our home un-marketable, reduce the enjoyment of our properties, cause emotional distress, they will do nothing the enhance the quality of our lives. which is what our ten year prosperity plan mission states. these billion dollar energy companies do not care about our concerns. they do not care about global warming, the environment or green house gases. the only green they care about is the green going into their pocket. the energy companies should give back to us more than it takes but they don't. stop letting these solar con men have their way. ref:stopthesethings.com/wind industry thugs sue subsidies:nextera's reign of legal terror...

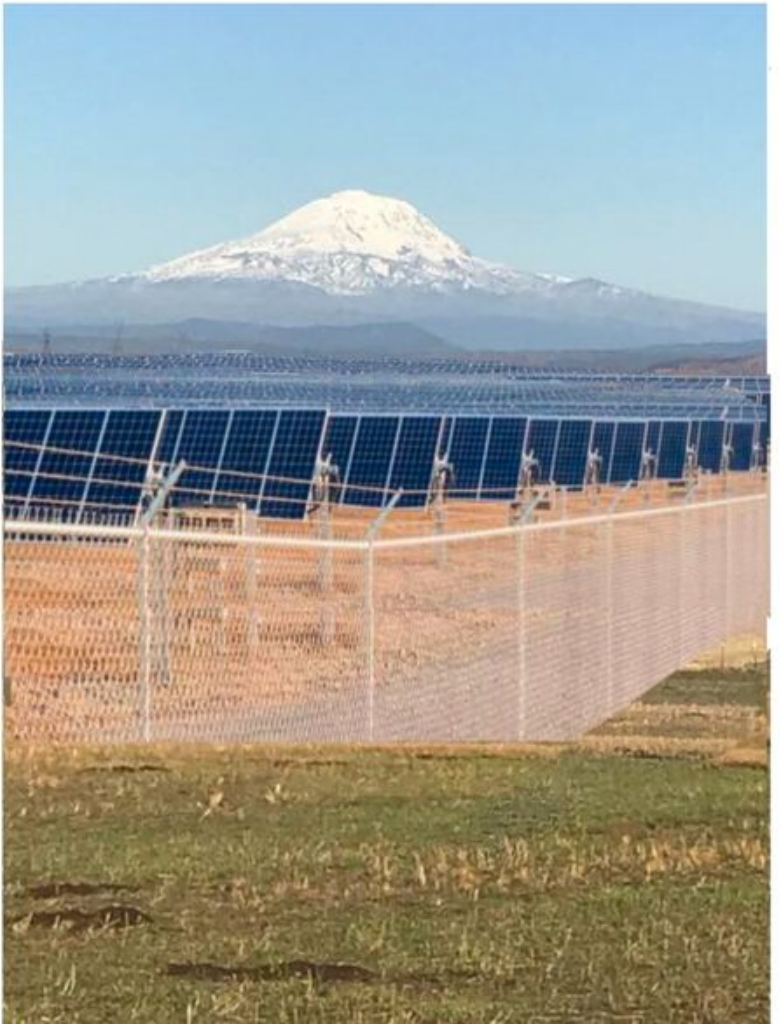
these energy companies are greedy, heartless and ruthless. they will not allow any state county or citizen to get in their way of getting what they want. what they want is the billions of dollars they receive from the department of energy and state government and possibly tax breaks from a county. YOUR TAX DOLLAR. these 4 energy companies currently acquiring leased land surrounding farm land around goldendale wa. they have approximately 14000 acres. the companies are avangird, nextera, invenergy and cypress creek renewable. all of these companies have filed various lawsuit against states counties and citizens who

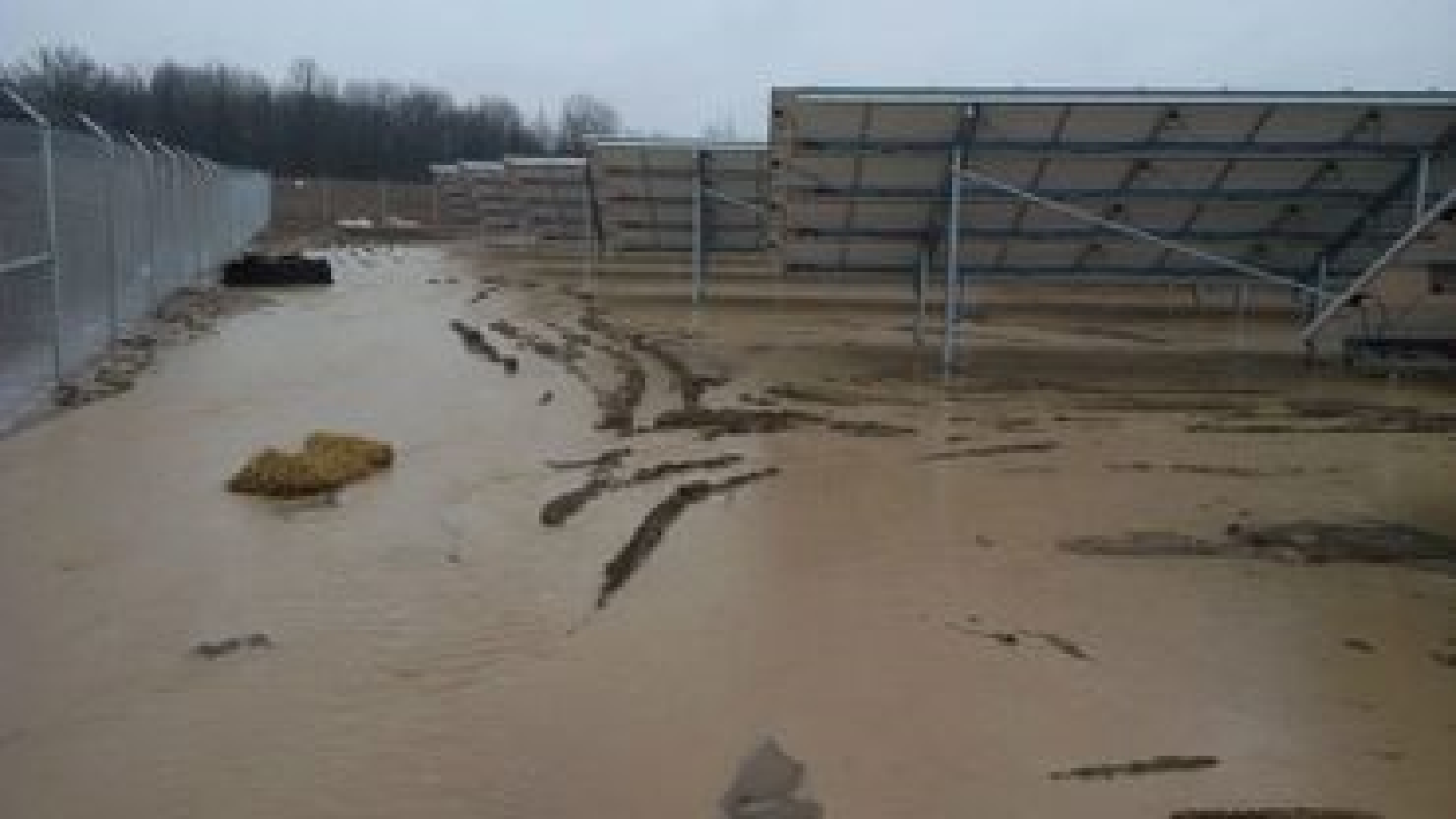
stand in their way. ref: ecbpublishing.com/nextera-strikes-back-prepares... ref: invenergy sues iso and national grid upriseri.com/ invenergy's lawsuit against national grid may put tens of millions of construction cost on ratepayers...stopthesethings.com/wind industry thugs sue for subsidies; nextera's reign of legal terror

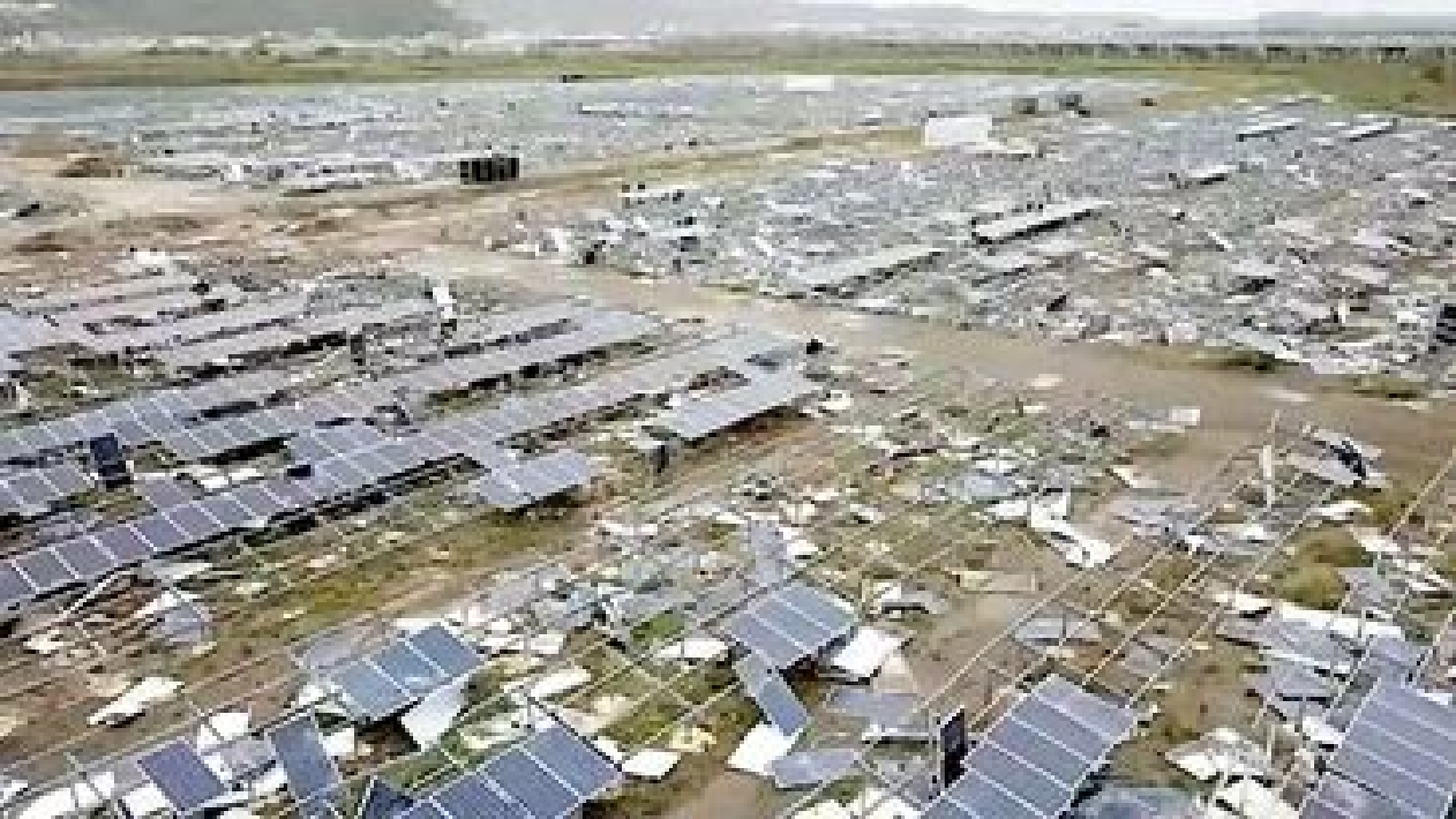
how can you continue to allow these energy corporations to get by with their energy scam ? your decision to allow solar and wind to continue will only create state wide super fund clean up sites in the very near future. this is your future too. your decisions will have a huge impact on everyone's future, a future your children will have to deal with. is this what you want ? start doing what's right for all citizens not just governor inslee. time to step up

greg wagner C.E.A.S.E









Citizens Educated About SOLAR Eenergy

energy companies who received taxpayer money from dept. energy and filed bankruptcy

a123 abound solar beacon power solyndra sun edison evergreen solar spectra watt sunpower first solar babcock brown enerdal willar kelsey solar group brightsource satcon abengoa tonopah solar energy advent solar appilied solar optisolar ready solar
solasta sv solar senergen signet solar sun film wakonda epv solar stirling energy ascent solar calyxo heliovolt national semiconductor solar magic net crystal soliant aqt ampulse azuray bp centrotherm csg day 4 energy ecd energy innovations flexcell global watt green volts global solar energy g24i hoku inventvx konarki opersun pramac pairan ralos recwater schott schuco sencera siliken skyline solar
siemens solar millennium solar hybrid sovello solar day solar power industries sharp soltecture sun concepts solibro solon scheuten solar solfocus sunways bosch solar
concentrated optics suntech wvxi. will invenergy/cypress creek renewables/nextera be next to file bankruptcy ???

references

bloomberg.com/$1 billion solar plant obsolete before it went on line crescent dunes
greentechmedia.com/rest in peace list of deceased solar companies
computerworld.com/sun edison world largest renewable co.
money.cnn.com/obamas alternative energy bankruptcies
the daily signal.com/presidents obama's taxpayer back green energy failures
businesswire.com/satcon bankrupt
abcnews.go.com/green firms get fed cash give ecexs bounses and fail
news.com.au/abengoa bankrupt
foxnews.com/solyndra bankrupt

energy companies unethical and dishonest behavior

we citizens are taxed by the federal government. part of the money goes to the department of energy. they in turn they supposedly loan the money to these large local and many foreign energy companies worth billions of dollars to help them start new renewable projects. they receive the "loan" maybe start a project or complete one which then goes bankrupt and they disappear with our tax money. very few are ever prosecuted, imprisoned or return our money. this is billions of our tax money given away and wasted. solar panels/lithium ion batteries are both toxic hazardous waste. these companies leave behind this environmental mess for the leasing land owners or the tax paying citizens to clean up at a great cost. renewable energy is costing us more than it is worth. only the leasing landowners (many do not live here) and the energy companies are making money. we will receive none of the electricity, little tax revenue, a few permanent jobs. we will have the ugly hazardous solar farm destroying our county. is this the legacy we want to leave for future generations ? or do we want to be fore sighted and stop this now? these are facts that supporters of renewable energy intentionally hide. we can not allow this to happen in our county.

Appendix F

Mitigation Summary

Klickitat County Energy Overlay

Environmental Impact Statement

MITIGATION SUMMARY

Introduction

The EIS is a tool to evaluate the overall impact of the County's objective and goals for energy development in optimal locations within the County. The EIS suggests mitigation of environmental impacts through existing federal, state, and county regulations, and other reasonable mitigation alternatives to mitigate and manage identified impacts. The EIS also identifies areas where insufficient information exists to fully assess an impact and makes recommendations for site-specific information requirements for a proposed development project.

This Mitigation Summary provides a review of potential mitigation actions that would offset potential impacts due to development of energy facilities. This document can be used by the County when reviewing an energy development proposal at a specific site, and it can be used by applicants for energy development facilities in their preliminary design to offset potential impacts prior to submitting their proposal to the County.

The Summary is organized by the type of energy facilities evaluated in the Energy Overlay EIS.

Wind Facilities

Impact Area	Potential Mitigation Actions
Air Quality	
Potential for reduced air quality during construction from dust generation caused by operation of construction equipment	• Apply standard construction dust control practices and methods such as haul road watering, covering stockpiles, and rapid revegetation of disrupted areas. • Construction timing could also be considered to mitigate dust emissions, taking advantage of seasonal/weather conditions and avoiding dry, low-precipitation periods where dust occurrence is high.
Noise	
Potential for construction-related noise, as well as noise from operation of wind turbines	• Construction should not be performed within 1,000 feet (305 meters) of an occupied dwelling on Sundays, legal holidays, or between 10 p.m. and 6 a.m. on other days. • Construction equipment should have noise control devices; equipment should be operated with muffled exhaust systems. • Pile driving or blasting operations, if required, should not be performed within 3,000 feet (914 meters) of an occupied dwelling on Sundays, legal holidays, or between 8 p.m. and 8 a.m. on other days. • If necessary, additional noise reduction measures during construction include turning off idling equipment, use of the quietest effective back up alarms. • During operation, noise mitigation for wind turbines could be based on an acoustical analysis of the final project design, using noise level data for the actual turbine, size and layout. The intent of the analysis is to demonstrate compliance with the WAC noise criteria and any additional criteria established by Klickitat County. • Additional noise mitigation during operation may require setbacks for the wind turbines from existing receptors.

Vegetation & Wildlife

Potential for temporary disturbance and displacement of wildlife and wildlife habitat during construction, loss of habitat through conversion of land to energy facilities, and ongoing bird mortality as a result of facility operations.

Wind farms have the potential to cover larger areas, there is an increased chance of affecting plant habitat or introducing non-native species

Construction along ridge tops can have short term impacts on fish habitat because of runoff and sedimentation. Additionally, the interconnection of underground collector lines throughout strings of turbines could require stream crossings.

- Any construction project should assess the potential short term (construction disturbance) and long term (habitat loss) impacts to birds and bats. Each site is likely to have unique requirements. Hence, a site specific management plan should be developed to address impacts to flying animals. The plan might include elements such as:
  - Construction timing to avoid disturbing migration or reproductive periods
  - Mitigation for loss of habitat such as constructing bird or bat boxes elsewhere
  - Deterrence methods to discourage birds or bats from roosting in areas where they could be harmed.
- Wind development plans formulated to minimize avian impacts should attempt to maximize wind development in agricultural areas while perhaps allowing for smaller scale developments in native landscapes.
- Areas of nesting habitat for sensitive raptor species, such as peregrine falcons and golden eagles, and nesting buffers should be defined on a case-by-case basis, and these areas should be avoided when siting new wind plants.
- Impacts to raptors could be reduced further by avoiding siting turbines directly at the crests and edges of hilltops where raptors use the uplift created by the cliff face. Developments in areas of higher raptor use could propose setbacks from the cliff face or hilltop ridge.
- Site specific studies for the presence of plant species of concern would provide information on a project's potential impacts. If the study indicates the presence of plant species of concern, a site specific mitigation plan would be needed. The mitigation plan might include:
  - Construction timing to avoid short term impacts (e.g., performing certain construction work in winter when plants are dormant or present only as seeds or below ground).
  - Either onsite or offsite habitat restoration or enhancement to offset loss
  - Alteration of the facility configuration to preserve habitats (e.g., fencing off areas where plants are present).
- The presence of noxious weeds could be considered when developing site specific mitigation plans.
- During construction, conduct proper site management of stormwater and resultant sedimentation into nearby water

	bodies. Develop a stormwater pollution prevention plan (SWPPP) and implement best management practices (BMPs) required by the National Pollutant Discharge Elimination System (NPDES) stormwater permit program to reduce the potential for contamination of stormwater runoff and sedimentation. • Constructing collector line crossings perpendicular to the stream reduces the area of in stream disturbances. Such crossings typically require a temporary stream diversion, with work occurring during WDFW designated in water work periods.
Geology and Floods	
During construction and operation, access roads to facilities increase potential for erosion	• The following mitigation measures would help minimize impacts to soil: ~ Minimize vegetation removal ~ Avoid construction on steep slopes ~ Properly engineer cut-and-fill slopes ~ Install appropriate roadway drainage to control and disperse runoff ~ Use aggregate surfaces on access roads in areas of sustained wind ~ Apply erosion control measures such as silt fence, straw bales, soil stabilizers, and reseeding areas as required. • Flood mitigation measures may include vegetation management, stormwater management (culverts, floodgates, retention basins), or landslide/snow avalanche stabilization.
Water	
No significant impacts are identified in EIS	
Cultural Resources	
Potential to impact lithic scatters and TCPs from ground-disturbing activities during construction.	• Determine if cultural resources are present in the proposed project area, beginning with a review of records of previously recorded historic properties. • Examine area for evidence of historic or archaeological properties through pedestrian surveys conducted by trained archaeological survey crews of all areas potentially affected by any ground disturbing activities plus an additional buffer area. • If properties are identified, they are then evaluated against the significance criteria provided above for listing on the National Register of Historic Places. If the properties are determined eligible for listing, and avoidance of impacts is

	not possible (for example, by moving the location of a facility), mitigation most often takes the form of data recovery or archaeological excavation. • Where impacts to standing structures are unavoidable, professional documentation and photographic Historic American Building Survey/Historic American Engineering Record (HABS/HAER) documentation may be conducted to preserve a permanent archival record of the property.
Visual Resources & Aesthetics	
Structures could interrupt natural vistas and scenic views	• Use a non-reflective paint for towers and blades to reduce glare. • Paint towers in a neutral color that blends easily with the neutral colors of the existing landscape. • Provide a facility free of debris and unused or inoperative equipment by storing equipment and supplies within enclosed buildings or removing damaged or unusable equipment from the site. • Locate the turbines in strings to improve aesthetics by providing a more uniform looking development.
Public Health & Safety	
Construction activities and operation of sensitive, high-powered equipment could pose risk to public Unsubstantiated, but potential risk from low level electromagnetic force (EMF) radiation associated with high-power lines and high voltage electrical equipment.	• Complete Health and Safety Plan for Construction that includes instructions to: ~ Hold construction crew safety meetings at the start of each workday to discuss potential safety issues and concerns ~ Inform employees what to do in case of an emergency ~ Identify locations of nearby medical facilities and important telephone numbers. ~ Maintain fencing and access gates around dangerous equipment or portions of the site ~ Secure the site at the end of each workday to protect equipment and the general public ~ Post warning signs near high-voltage equipment ~ Offer training to employees to include topics such as first aid, cardiopulmonary resuscitation, and safety equipment inspection ~ Carry fire suppression equipment such as shovels and fire extinguishers on vehicles ~ Coordinate construction activities with access needs of nearby landowners.

	~ Use warning signs and gates to discourage unauthorized visitors during construction hours • Prepare detailed Operation and Maintenance Safety Manual that calls for frequent safety meetings to reduce health and safety risks for personnel • Avoid contact with electrical equipment through facility compliance with building codes. • To prevent unauthorized access to the turbines, lock turbine tower doors and have no outside ladders on the towers. • Fence and lock substations; use access controls and security patrols. • The Electric Power Research Institute has produced guidelines for safe distances from power equipment (EPRI 1995). The guidance could be used to design distribution systems and set safe distances from power lines and other EMF sources.
Land Use & Recreation	
Most likely to site on existing agricultural lands, which may reduce crop production	• Site turbines and associated facilities to maximize the availability of existing roadways and reduce land use impact. • Include buffers from residential uses.
Socioeconomics	
Potential economic impact to landowners	• Provide lease payments to property owners for use of agricultural land for wind power development.
Transportation	
Traffic and roadway impacts would occur during the construction phase of wind energy facilities Construction related impacts on county road systems could be high, as they may not be built to withstand the projected loads.	• Coordinate with Klickitat County Public Works Department to determine road capacity limits, obtain necessary overweight permits, and steps to accommodate overweight loads. • Prepare a detailed traffic study to fully determine the traffic impacts. • Prepare a construction traffic control plan and construction management plan that address timing of heavy equipment and material deliveries, signage, lighting, traffic control device placement, dust and noise control, and the establishment of work hours outside peak traffic periods. • Other methods for mitigating potential traffic impacts may include: ~ Stationing flag persons at access roads ~ Placing advance warning flashes ~ Providing signage along the roadways.

Public Services & Utilities

Potential impacts from construction of transmission facilities to link the wind power project to the existing transmission system.	• Site new generation facilities close to existing transmission with available capacity, thus reducing the amount of new transmission required. • Site generation facilities near load. When generation is near load, less new transmission is required. In general, however, most of the major load growth that is stimulating the demand for new generation is occurring outside of Klickitat County. • Expand the capacity of existing transmission by increasing conductor size, adding an additional circuit on existing poles, or replacing lower-voltage transmission lines with higher voltage transmission lines.

Gas-Fired Generation

Impact Area	Potential Mitigation Actions
Air Quality	
Potential for reduced air quality during construction from dust generation caused by operation of construction equipment Operational impacts include potential for minor localized impacts to air quality	• Apply standard construction dust control practices and methods such as haul road watering, covering stockpiles, and rapid revegetation of disrupted areas. • Construction timing could also be considered to mitigate dust emissions, taking advantage of seasonal/weather conditions and avoiding dry, low-precipitation periods where dust occurrence is high. • All new emissions source must demonstrate compliance with all applicable federal and state air quality requirements, including emissions standards and ambient air quality standards (AAQS). The permitting process allows for evaluation of additional air quality issues such as cumulative impacts, visibility degradation in the Columbia River Gorge National Scenic Area (CRGNSA), and acid deposition in Class I protected areas. • Best available control technology (BACT) would apply to address NO_x, SO_2, CO and particulate matter emissions in new plants constructed under Ecology permitting.
Noise	
Potential for construction-related noise, as well as noise from during operation of facilities.	• Construction should not be performed within 1,000 feet (305 meters) of an occupied dwelling on Sundays, legal holidays, or between 10 p.m. and 6 a.m. on other days. • Construction equipment should have noise control devices; equipment should be operated with muffled exhaust systems. • Pile driving or blasting operations, if required, should not be performed within 3,000 feet (914 meters) of an occupied dwelling on Sundays, legal holidays, or between 8 p.m. and 8 a.m. on other days. • If necessary, additional noise reduction measures during construction include turning off idling equipment, use of the quietest effective back up alarms. • Locate major noise sources inside acoustically treated buildings. • Install acoustically absorptive silencers on the combustion turbine air inlet system, enclosure ventilation system, and emergency relief valves. • Line or baffle the base of the exhaust stack. • Install acoustically absorptive insulation in the duct walls of

Impact Area	Potential Mitigation Actions
	the combustion turbine inlet air and exhaust systems. • Install a noise barrier along the top edge of the cooling tower to absorb noise from the fans and cascading water.
Vegetation & Wildlife	
Potential for temporary disturbance and displacement of wildlife and wildlife habitat during construction, permanent loss of viable plant and animal habitat within the footprint of the development. Construction activities can have short term impacts on fish habitat because of runoff and sedimentation. Construction of water conveyance pipelines may require crossings of wetlands or streams, which could impact fish habitat. Potential Indirect impacts to fish from use of water for thermal power generation and disposal of heated water discharges to rivers and streams	• During construction, conduct proper site management of stormwater and resultant sedimentation into nearby water bodies. Develop a stormwater pollution prevention plan (SWPPP) and implement best management practices (BMPs) required by the National Pollutant Discharge Elimination System (NPDES) stormwater permit program to reduce the potential for contamination of stormwater runoff and sedimentation. • Conduct site specific studies for terrestrial animals and plants of concern to provide information on a project's potential impact on sensitive species. If the study indicates the presence of species of concern, a site specific mitigation plan may be needed to evaluate impacts and potential offsets. The mitigation plan might include: ~ Construction timing to avoid disturbing animals during migration or reproductive periods ~ Either onsite or offsite habitat restoration or enhancement ~ Deterrence methods to prevent animals from harm at the energy facility. ~ Alteration of the facility configuration to preserve habitats (e.g., fencing off areas where plants are present). • Implement BMPs during facility construction and throughout operation to further reduce the potential for impacts to fisheries resources: ~ Minimize asphalt access road construction to allow stormwater to infiltrate soils. ~ Regularly inspect equipment and vehicles for leaks of petrochemical products. ~ Contain and properly dispose of water used to wash down equipment and vehicles. ~ Revegetate areas disturbed by earth moving activities as early as possible to reduce the potential for erosion • To minimize potential contamination to rivers and streams, prepare a Stormwater Pollution Prevention Plan (SWPPP) and Spill Prevention Control and Countermeasures Plan (SPCC) • Avoid construction of facilities across streams or wetlands;

Impact Area	Potential Mitigation Actions
	use tunneling methods if crossing is necessary to avoid habitat impacts. • Mitigation for the intake of water might include the following measures. ~ Acquire uninterruptible water rights within the water body to mitigate "bucket for bucket" the intake of water during low flow periods. Depending upon the water body that is the water source, this kind of mitigation might be required by law. ~ Participate in water conservation projects with local irrigation or water districts. The conservation projects could include public awareness presentations, media outreach, or implementing financial incentives for conservation. ~ Participate in stream enhancement or restoration projects. By identifying a specific goal such as reducing sedimentation, a stream restoration project could be conducted to prevent stream bank erosion.
Geology and Floods	
Potential for temporary erosion impacts during construction Underground pipelines can be damaged during a seismic event due to external stresses on the pipes	• The following mitigation measures would help minimize erosion impacts: ~ Minimize vegetation removal ~ Avoid construction on steep slopes ~ Properly engineer cut-and-fill slopes ~ Install appropriate roadway drainage to control and disperse runoff ~ Use aggregate surfaces on access roads in areas of sustained wind ~ Apply erosion control measures such as silt fence, straw bales, soil stabilizers, and reseeding areas as required. • Follow DOT pipeline safety standards (40 CFR Part 192), which addresses pipeline design and include such design applications as: ~ Routing modification ~ Engineered backfill materials ~ Use of high strength steels ~ Slope stabilization ~ Design of pipeline to accommodate movement
Water	

Impact Area	Potential Mitigation Actions
Potential reductions in instream flows and additional drawdown in existing water supply wells; reducing instream flows could also create or exacerbate water quality impacts.	• Application for water right changes addresses potential impacts; the applicant must demonstrate to the satisfaction of the Water Conservancy Board and Ecology that the proposed change/transfer would not impair existing water rights or pending applications, instream flows, or water quality, and is in the public interest (with regard to change to a groundwater right).
Cultural Resources	
Potential to impact lithic scatters and TCPs from ground-disturbing activities during construction.	• Determine if cultural resources are present in the proposed project area, beginning with a review of records of previously recorded historic properties. • Examine area for evidence of historic or archaeological properties through pedestrian surveys conducted by trained archaeological survey crews of all areas potentially affected by any ground disturbing activities plus an additional buffer area. • If properties are identified, they are then evaluated against the significance criteria provided above for listing on the National Register of Historic Places. If the properties are determined eligible for listing, and avoidance of impacts is not possible (for example, by moving the location of a facility), mitigation most often takes the form of data recovery or archaeological excavation. • Where impacts to standing structures are unavoidable, professional documentation and photographic Historic American Building Survey/Historic American Engineering Record (HABS/HAER) documentation may be conducted to preserve a permanent archival record of the property.
Visual Resources & Aesthetics	
Structures could interrupt natural vistas and scenic views	• Construct new equipment and fencing with materials that restrict glare, such as painted metal and/or masonry for structural exteriors. .
Potential light pollution from necessary facility lighting, and glare (reflected sunlight)	• Use colors that reduce glare and to help blend with the existing development in the project vicinity. • Glaze windows to prevent glare. • Provide a facility free of debris and unused or inoperative equipment to reduce visual impact. • Plant a tree/vegetation screen to reduce views of the plant and reduce visual impacts from passing motorists and nearby residents

Impact Area	Potential Mitigation Actions
	• To reduce offsite impacts from lighting, direct light fixtures toward the middle of the property and away from outer project site boundaries. • Where practical, design outdoor lighting to address light scattering especially in the vicinity of Goldendale Observatory.
Public Health & Safety	
Construction activities and operation of sensitive, high-powered equipment could pose risk to public Use of hazardous materials at site during operation could pose risk Potential for leaks in gas transmission pipeline	• Complete Health and Safety Plan for Construction that includes instructions to: ~ Hold construction crew safety meetings at the start of each workday to discuss potential safety issues and concerns ~ Inform employees what to do in case of an emergency ~ Identify locations of nearby medical facilities and important telephone numbers. ~ Maintain fencing and access gates around dangerous equipment or portions of the site ~ Secure the site at the end of each workday to protect equipment and the general public ~ Post warning signs near high-voltage equipment ~ Offer training to employees to include topics such as first aid, cardiopulmonary resuscitation, and safety equipment inspection ~ Carry fire suppression equipment such as shovels and fire extinguishers on vehicles ~ Coordinate construction activities with access needs of nearby landowners. ~ Use warning signs and gates to discourage unauthorized visitors during construction hours • Prepare detailed Operation and Maintenance Safety Manual that calls for frequent safety meetings to reduce health and safety risks for personnel • Store small quantities of flammable materials in special safety cabinets in their original containers. • Store large volumes of material such as aqueous ammonia, mineral oil, and lubricating oil, in tanks or other equipment designed to contain those materials. • Construct, operate and maintain pipelines in accordance with US Department of Transportation safety standards, as set for in 49 CFR Part 192 as well as WUTC requirements. Examples of protection measures could include from these

Impact Area	Potential Mitigation Actions
	regulations include: ~ Clearly mark pipeline routes to warn the public of buried gas line ~ Bury pipelines to a depth of three to four feet to avoid potential disturbance by farm equipment. ~ Cathodically protect pipelines to ensure the integrity of the line
Land Use & Recreation	
Potential conversion of existing agricultural or forested land to industrial use Potential impacts to adjacent residential areas	• Use existing high-pressure gas pipelines and high-voltage transmission lines • Buffers from residential uses can be used to address compatibility concerns.
Socioeconomics	
No significant impacts are identified in EIS	
Transportation	
Traffic and roadway impacts would occur during construction	• Prepare a construction traffic control plan and construction management plan that address timing of heavy equipment and material deliveries, signage, lighting, traffic control device placement, dust and noise control, and the establishment of work hours outside peak traffic periods. • Other methods for mitigating potential traffic impacts may include: ~ Stationing flag persons at access roads ~ Placing advance warning flashes ~ Providing signage along the roadways.
Public Services & Utilities	
May require additions to PUD and/or BPA transmission facilities Requires a connection with the gas pipeline that provides its fuel. Discharges to wastewater system have elevated levels of minerals and higher water temperatures than	• Site new generation facilities close to existing transmission with available capacity, thus reducing the amount of new transmission required. • Site generation facilities near load. When generation is near load, less new transmission is required. In general, however, most of the major load growth that is stimulating the demand for new generation is occurring outside of Klickitat County. • Expand the capacity of existing transmission by increasing conductor size, adding an additional circuit on existing poles, or replacing lower-voltage transmission lines with

Impact Area	Potential Mitigation Actions
receiving waters	higher voltage transmission lines. • Site new gas generation near existing gas transmission pipelines to reduce the length of the lateral pipeline needed to link the generation to the transmission pipeline (but would not affect the need for additional gas transmission capacity). • Consider higher efficiency and/or smaller gas generation projects, which could require fewer or smaller additions to gas transmission infrastructure. • Obtain necessary permits for wastewater discharge (NPDES) and adhere to permit requirements, which may call for pre-treatment of wastewater prior to disposal, or construction of improvements to public wastewater treatment facilities.

Bio Mass

Impact Area	Potential Mitigation Actions
Air Quality	
Potential for reduced air quality during construction from dust generation caused by operation of construction equipment Operational impacts include potential for minor localized impacts to air quality	• Apply standard construction dust control practices and methods such as haul road watering, covering stockpiles, and rapid revegetation of disrupted areas. • Construction timing could also be considered to mitigate dust emissions, taking advantage of seasonal/weather conditions and avoiding dry, low-precipitation periods where dust occurrence is high. • Apply emission control devices for state-of-the-art hog fuel boilers such as cyclones, wet scrubbers, electrostatic precipitators (ESPs), fabric filters, or a combination of devices.
Noise	
Potential for construction-related noise, as well as noise from during operation of facilities.	• Construction should not be performed within 1,000 feet (305 meters) of an occupied dwelling on Sundays, legal holidays, or between 10 p.m. and 6 a.m. on other days. • Construction equipment should have noise control devices; equipment should be operated with muffled exhaust systems. • Pile driving or blasting operations, if required, should not be performed within 3,000 feet (914 meters) of an occupied dwelling on Sundays, legal holidays, or between 8 p.m. and 8 a.m. on other days. • If necessary, additional noise reduction measures during construction include turning off idling equipment, use of the quietest effective back up alarms. • Locate major noise sources inside acoustically treated buildings.
Vegetation & Wildlife	
Potential for temporary disturbance and displacement of wildlife and wildlife habitat during construction, permanent loss of viable plant and animal habitat within the footprint of the development. Potential for spreading non native plants due to higher volumes of truck	• During construction, conduct proper site management of stormwater and resultant sedimentation into nearby water bodies. Develop a stormwater pollution prevention plan (SWPPP) and implement best management practices (BMPs) required by the National Pollutant Discharge Elimination System (NPDES) stormwater permit program to reduce the potential for contamination of stormwater runoff and sedimentation. • Conduct site specific studies for terrestrial animals and plants of concern to provide information on a project's potential impact on sensitive species. If the study indicates the presence of species of concern, a site specific mitigation

Impact Area	Potential Mitigation Actions
traffic, non native species could escape from the fuel holding areas. Construction activities can have short term impacts on fish habitat because of runoff and sedimentation. Storage of organic materials could contribute contaminants to nearby waterbodies, affecting fish habitat	plan may be needed to evaluate impacts and potential offsets. The mitigation plan might include: ~ Construction timing to avoid disturbing animals during migration or reproductive periods ~ Either onsite or offsite habitat restoration or enhancement ~ Deterrence methods to prevent animals from harm at the energy facility. ~ Alteration of the facility configuration to preserve habitats (e.g., fencing off areas where plants are present). • Implement BMPs during facility construction and throughout operation to further reduce the potential for impacts to fisheries resources: ~ Minimize asphalt access road construction to allow stormwater to infiltrate soils. ~ Regularly inspect equipment and vehicles for leaks of petrochemical products. ~ Contain and properly dispose of water used to wash down equipment and vehicles. ~ Revegetate areas disturbed by earth moving activities as early as possible to reduce the potential for erosion • To minimize potential contamination to rivers and streams, prepare a Stormwater Pollution Prevention Plan (SWPPP) and Spill Prevention Control and Countermeasures Plan (SPCC) • Avoid construction of facilities across streams or wetlands; use tunneling methods if crossing is necessary to avoid habitat impacts. • Ensure that fuel storage areas are adequately designed to contain fugitive plant material, including seeds • Implement best management practices for storage and handling of organic materials, such as: ~ Construct covered storage facility for organic materials ~ Treat stormwater prior to discharge ~ Line the containment area

Geology and Floods

Potential for temporary erosion impacts during construction	• The following mitigation measures would help minimize erosion impacts: ~ Minimize vegetation removal ~ Avoid construction on steep slopes ~ Properly engineer cut-and-fill slopes ~ Install appropriate roadway drainage to control and disperse runoff ~ Use aggregate surfaces on access roads in areas of sustained wind ~ Apply erosion control measures such as silt fence, straw bales, soil stabilizers, and reseeding areas as required.

Water

Potential reductions in instream flows and additional drawdown in existing water supply wells; reducing instream flows could also create or exacerbate water quality impacts.	• Application for water right changes addresses potential impacts; the applicant must demonstrate to the satisfaction of the Water Conservancy Board and Ecology that the proposed change/transfer would not impair existing water rights or pending applications, instream flows, or water quality, and is in the public interest (with regard to change to a groundwater right).

Cultural Resources

Potential to impact lithic scatters and TCPs from ground-disturbing activities during construction.	• Determine if cultural resources are present in the proposed project area, beginning with a review of records of previously recorded historic properties. • Examine area for evidence of historic or archaeological properties through pedestrian surveys conducted by trained archaeological survey crews of all areas potentially affected by any ground disturbing activities plus an additional buffer area. • If properties are identified, they are then evaluated against the significance criteria provided above for listing on the National Register of Historic Places. If the properties are determined eligible for listing, and avoidance of impacts is not possible (for example, by moving the location of a facility), mitigation most often takes the form of data recovery or archaeological excavation. • Where impacts to standing structures are unavoidable, professional documentation and photographic Historic American Building Survey/Historic American Engineering Record (HABS/HAER) documentation may be conducted to

	preserve a permanent archival record of the property.
Visual Resources & Aesthetics	
Structures could interrupt natural vistas and scenic views Potential light pollution from necessary facility lighting, and glare (reflected sunlight)	• Construct new equipment and fencing with materials that restrict glare, such as painted metal and/or masonry for structural exteriors. . • Use colors that reduce glare and to help blend with the existing development in the project vicinity. • Glaze windows to prevent glare. • Provide a facility free of debris and unused or inoperative equipment to reduce visual impact. • Plant a tree/vegetation screen to reduce views of the plant and reduce visual impacts from passing motorists and nearby residents • To reduce offsite impacts from lighting, direct light fixtures toward the middle of the property and away from outer project site boundaries. • Where practical, design outdoor lighting to address light scattering especially in the vicinity of Goldendale Observatory.
Public Health & Safety	
Construction activities and operation of sensitive, high-powered equipment could pose risk to public Use of hazardous materials at site during operation could pose risk	• Complete Health and Safety Plan for Construction that includes instructions to: ~ Hold construction crew safety meetings at the start of each workday to discuss potential safety issues and concerns ~ Inform employees what to do in case of an emergency ~ Identify locations of nearby medical facilities and important telephone numbers. ~ Maintain fencing and access gates around dangerous equipment or portions of the site ~ Secure the site at the end of each workday to protect equipment and the general public ~ Post warning signs near high-voltage equipment ~ Offer training to employees to include topics such as first aid, cardiopulmonary resuscitation, and safety equipment inspection ~ Carry fire suppression equipment such as shovels and fire extinguishers on vehicles ~ Coordinate construction activities with access needs of nearby landowners.

	~ Use warning signs and gates to discourage unauthorized visitors during construction hours • Prepare detailed Operation and Maintenance Safety Manual that calls for frequent safety meetings to reduce health and safety risks for personnel • Store small quantities of flammable materials in special safety cabinets in their original containers. • Store large volumes of material such as aqueous ammonia, mineral oil, and lubricating oil, in tanks or other equipment designed to contain those materials.
Land Use & Recreation	
Potential conversion of existing agricultural or forested land to industrial use	• Use existing industrial property to site new facilities
Potential impacts to adjacent residential areas	• Use buffers from residential uses can be used to address compatibility concerns.
Socioeconomics	
No significant impacts are identified in EIS	
Transportation	
Traffic and roadway impacts would occur during construction Potential impacts to roadways during operation	• Prepare a construction traffic control plan and construction management plan that address timing of heavy equipment and material deliveries, signage, lighting, traffic control device placement, dust and noise control, and the establishment of work hours outside peak traffic periods. • Other methods for mitigating potential traffic impacts may include: ~ Stationing flag persons at access roads ~ Placing advance warning flashes ~ Providing signage along the roadways. • Prepare a more detailed traffic study to fully determine the traffic impacts during operation; address mitigation needs as necessary
Public Services & Utilities	
May require additions to PUD and/or BPA transmission facilities	• Site new generation facilities close to existing transmission with available capacity, thus reducing the amount of new transmission required.
Requires a connection with the gas pipeline	• Site generation facilities near load. When generation is near load, less new transmission is required. In general,

that provides its fuel.	however, most of the major load growth that is stimulating the demand for new generation is occurring outside of Klickitat County.
Discharges to wastewater system have elevated levels of minerals and higher water temperatures than receiving waters	• Expand the capacity of existing transmission by increasing conductor size, adding an additional circuit on existing poles, or replacing lower-voltage transmission lines with higher voltage transmission lines. • Site new gas generation near existing gas transmission pipelines to reduce the length of the lateral pipeline needed to link the generation to the transmission pipeline (but would not affect the need for additional gas transmission capacity). • Consider higher efficiency and/or smaller gas generation projects, which could require fewer or smaller additions to gas transmission infrastructure. • Obtain necessary permits for wastewater discharge (NPDES) and adhere to permit requirements, which may call for pre-treatment of wastewater prior to disposal, or construction of improvements to public wastewater treatment facilities.

Solar

Impact Area	Potential Mitigation Actions
Air Quality	
Potential for reduced air quality during construction from dust generation caused by operation of construction equipment	• Apply standard construction dust control practices and methods such as haul road watering, covering stockpiles, and rapid revegetation of disrupted areas. • Construction timing could also be considered to mitigate dust emissions, taking advantage of seasonal/weather conditions and avoiding dry, low-precipitation periods where dust occurrence is high.
Noise	
Potential for construction-related noise	• Construction should not be performed within 1,000 feet (305 meters) of an occupied dwelling on Sundays, legal holidays, or between 10 p.m. and 6 a.m. on other days. • Construction equipment should have noise control devices; equipment should be operated with muffled exhaust systems. • Pile driving or blasting operations, if required, should not be performed within 3,000 feet (914 meters) of an occupied dwelling on Sundays, legal holidays, or between 8 p.m. and 8 a.m. on other days. • If necessary, additional noise reduction measures during construction include turning off idling equipment, use of the quietest effective back up alarms.
Vegetation & Wildlife	
Potential for temporary disturbance and displacement of wildlife and wildlife habitat during construction, permanent loss of viable plant and animal habitat within the footprint of the development. May reduce the ability for raptors to hunt aerially by providing cover and refuge for prey Construction activities can have short term impacts on fish habitat because of runoff and	• During construction, conduct proper site management of stormwater and resultant sedimentation into nearby water bodies. Develop a stormwater pollution prevention plan (SWPPP) and implement best management practices (BMPs) required by the National Pollutant Discharge Elimination System (NPDES) stormwater permit program to reduce the potential for contamination of stormwater runoff and sedimentation. • Conduct site specific studies for terrestrial animals and plants of concern to provide information on a project's potential impact on sensitive species. If the study indicates the presence of species of concern, a site specific mitigation plan may be needed to evaluate impacts and potential offsets. The mitigation plan might include: ~ Construction timing to avoid disturbing animals during migration or reproductive periods ~ Either onsite or offsite habitat restoration or enhancement

Impact Area	Potential Mitigation Actions
sedimentation.	~ Deterrence methods to prevent animals from harm at the energy facility. ~ Alteration of the facility configuration to preserve habitats (e.g., fencing off areas where plants are present). • Implement BMPs during facility construction and throughout operation to further reduce the potential for impacts to fisheries resources: ~ Minimize asphalt access road construction to allow stormwater to infiltrate soils. ~ Regularly inspect equipment and vehicles for leaks of petrochemical products. ~ Contain and properly dispose of water used to wash down equipment and vehicles. ~ Revegetate areas disturbed by earth moving activities as early as possible to reduce the potential for erosion • To minimize potential contamination to rivers and streams, prepare a Stormwater Pollution Prevention Plan (SWPPP) and Spill Prevention Control and Countermeasures Plan (SPCC) • Develop a Solar Farm Management Plan to address bird and bat mortality and behavior monitoring
Geology and Floods	
Potential for temporary erosion impacts during construction	• The following mitigation measures would help minimize erosion impacts: ~ Minimize vegetation removal ~ Avoid construction on steep slopes ~ Properly engineer cut-and-fill slopes ~ Install appropriate roadway drainage to control and disperse runoff ~ Use aggregate surfaces on access roads in areas of sustained wind ~ Apply erosion control measures such as silt fence, straw bales, soil stabilizers, and reseeding areas as required.
Water	
No significant impacts are identified in EIS	

Impact Area	Potential Mitigation Actions
Cultural Resources	
Potential to impact lithic scatters and TCPs from ground-disturbing activities during construction.	• Determine if cultural resources are present in the proposed project area, beginning with a review of records of previously recorded historic properties. • Examine area for evidence of historic or archaeological properties through pedestrian surveys conducted by trained archaeological survey crews of all areas potentially affected by any ground disturbing activities plus an additional buffer area. • If properties are identified, they are then evaluated against the significance criteria provided above for listing on the National Register of Historic Places. If the properties are determined eligible for listing, and avoidance of impacts is not possible (for example, by moving the location of a facility), mitigation most often takes the form of data recovery or archaeological excavation. • Where impacts to standing structures are unavoidable, professional documentation and photographic Historic American Building Survey/Historic American Engineering Record (HABS/HAER) documentation may be conducted to preserve a permanent archival record of the property.
Visual Resources & Aesthetics	
Structures could interrupt natural vistas and scenic views	• Construct new equipment and fencing with materials that restrict glare, such as painted metal and/or masonry for structural exteriors. .
Potential light pollution from necessary facility lighting, and glare (reflected sunlight)	• Use colors that reduce glare and to help blend with the existing development in the project vicinity. • Glaze windows to prevent glare. • Provide a facility free of debris and unused or inoperative equipment to reduce visual impact. • Plant a tree/vegetation screen to reduce views of the plant and reduce visual impacts from passing motorists and nearby residents • To reduce offsite impacts from lighting, direct light fixtures toward the middle of the property and away from outer project site boundaries. • Where practical, design outdoor lighting to address light scattering especially in the vicinity of Goldendale Observatory. • Use PV tiles that are best suited to blend with the existing environment.

Impact Area	Potential Mitigation Actions
Public Health & Safety	
Construction activities and operation of sensitive, high-powered equipment could pose risk to public Potential risk for electric shock Potential for injury related to maintenance of elevated structures such as transmission towers Potential for fire resulting from maintenance activities Unsubstantiated, but potential risk from low level electromagnetic force (EMF) radiation associated with high-power lines and high voltage electrical equipment.	• Complete Health and Safety Plan for Construction that includes instructions to: ~ Hold construction crew safety meetings at the start of each workday to discuss potential safety issues and concerns ~ Inform employees what to do in case of an emergency ~ Identify locations of nearby medical facilities and important telephone numbers. ~ Maintain fencing and access gates around dangerous equipment or portions of the site ~ Secure the site at the end of each workday to protect equipment and the general public ~ Post warning signs near high-voltage equipment ~ Offer training to employees to include topics such as first aid, cardiopulmonary resuscitation, and safety equipment inspection ~ Carry fire suppression equipment such as shovels and fire extinguishers on vehicles ~ Coordinate construction activities with access needs of nearby landowners. ~ Use warning signs and gates to discourage unauthorized visitors during construction hours • Prepare detailed Operation and Maintenance Safety Manual that calls for frequent safety meetings to reduce health and safety risks for personnel • The Electric Power Research Institute has produced guidelines for safe distances from power equipment (EPRI 1995). The guidance could be used to design distribution systems and set safe distances from power lines and other EMF sources.
Land Use & Recreation	
Photovoltaic panels require space to be arrayed.	• Use of existing buildings for photovoltaic panels would reduce impacts to land use and recreation.
Socioeconomics	
No significant impacts are identified in EIS	
Transportation	
Traffic and roadway	• Prepare a construction traffic control plan and construction

Impact Area	Potential Mitigation Actions
impacts would occur during construction	management plan that address timing of heavy equipment and material deliveries, signage, lighting, traffic control device placement, dust and noise control, and the establishment of work hours outside peak traffic periods. • Other methods for mitigating potential traffic impacts may include: ~ Stationing flag persons at access roads ~ Placing advance warning flashes ~ Providing signage along the roadways.
Public Services & Utilities	
May require additions to PUD and/or BPA transmission facilities	• Site new generation facilities close to existing transmission with available capacity, thus reducing the amount of new transmission required. • Site generation facilities near load. When generation is near load, less new transmission is required. In general, however, most of the major load growth that is stimulating the demand for new generation is occurring outside of Klickitat County. • Expand the capacity of existing transmission by increasing conductor size, adding an additional circuit on existing poles, or replacing lower-voltage transmission lines with higher voltage transmission lines.