

PART 1

An environmentalist and a professional electrical and electronic engineer (MIET), so a natural supporter of PV, but not Cleve Hill because wrong solution in wrong place.
Alternatives would be far less damaging and better for electricity system.

Policy

Conflicts with Government's Sustainable Development Strategy, 2005, Environmental Strategy 2018, and Precautionary Principle.

Must be an overwhelming "Public Interest" for compulsory purchase of land and rights.
Must ensure Crichel Downs rules apply.

Location

The Grid Network Capacity Map (1) shows which points have available capacity for more generation or demand; for Cleve Hill there is no capacity for more generation or demand.
So more windpower from Whitstable Flats impossible, despite likelihood turbines upgraded.
Cleve Hill Solar (CHS) would prevent that, but CHS couldn't be upgraded, nor other generator connect.
Should future-proof whatever is installed now.

Applicant claims Cleve Hill best location but Kemsley, capacity for over 1 GW generation, Isle of Grain, 1 GW (2), Kingsnorth 240 MW, receive more sunshine, lower connection costs, reduce the CHS' high cost, produce more electricity.

Two continental inter-connectors to East Kent, IFA 2 GW, Nemo Link 1 GW.
Grid uses AC less efficient than DC for inter-connectors, so Grid needs generator near demand.
CHS worst possible place.

Viability

PV low load factor (3), so only viable if land low cost – what price nature?
Capital costs (4) going down, commercial roofs cheaper than large scheme, industrial sites have no transmission losses eg Manston Airport large roof areas/runways

No income available from *Contracts for Difference* so less viable and lower price - £57.50 per megawatt hour.

Key aspect for suppliers is reducing Maximum Demand to: avoid supply interruption, reduce costs, maintain 50 Hz supply frequency.
Flexibility rewarded financially.

Digitisation of Electricity market with real time reactions demand/supply and prices; flexible supplies and demands available to all (6, 7).
Many on-site sources - Uninterruptible Power Supplies (UPS) - can reduce peak demand and costs, and feed into mains supply, ensuring greater reliability, reduced maintenance, more income.

Battery storage provision at Electric vehicle (EVs) charge points. Eg: Pivot Power 2.25 GW, National Grid (NG) at motorway service stations. (8).

NG access to half hourly settlement data of export sites on distribution network (10) showing renewable generation so easier grid control.

25 March 2017, transmission system [demand dipped below overnight demand for the first time](#). caused by solar. So reduced its minimum system demand and instructed transmission system generators to turn down.
So CHS output curtailed at own peak output and small battery of little use.

NG partnered DNOs and Electron for shared generation and storage asset data register (11). So smaller generation, closer to demands can be integrated into Grid. Yielding robust GB-wide flexibility market unlocking huge value for consumers driving transition to low-carbon flexible future.

Use of subsidies for backup stopped (12) so income from proposed batteries not available.

Flexibility by domestic users is revolutionary, millions of homes involved in national system make electricity cheaper so CHS less viable (13, 14).

Operating rules and financial model dramatically changing (15, 16).

Evolution towards very low marginal costs reducing wholesale prices (17), **reducing** CHS viability.

Electricity demand declining, 2017 demand 1.9 Mtoe lower than 2012 (DBEIS).
2018 electricity *generated* lowest since 1994.

Forecasters over-estimate energy consumption: since 2010 when Hinkley Point nuclear Power Station justified by threat of lights going out, consumption down, lights stayed on and nearly all coal power stations closed down.

Requirement for CHS has gone.

CHS reduces carbon absorption of existing land, and carbon benefits available without destroying huge 'green' area.

Cheapest, lowest carbon way is energy efficiency. Efficiency first because the cheapest.
Insulating poorly insulated houses more important, woodfibre insulation captures and stores carbon.
PV expensive relative to alternatives.
Other low carbon sources available.

Impacts

Huge industrial intrusion into historic landscapes

Loss of productive agricultural land, Soil stores 10bn tonnes Carbon, supports ecosystems, manages water (www.cpre.org/soils).

Value of natural systems under-estimated, (18) TEEB is good economic practice and seeks to ensure that decisions are made to maintain and improve value that ecosystems and biodiversity provide. CHS failed to value these aspects and ecosystems and biodiversity damaged. Degradation of ecosystems and biodiversity adversely affects human well being.
Any decision made without full assessment would be invalid, damaging overall, and unacceptable.

Questionable engineering, meteorological assumptions; location, description and magnitude for breach scenarios.

Conflicts with Environment Agency's Medway Estuary and Swale Strategy.

Very intrusive construction, existing Substation caused significant damage.

"Mitigation" only make it slightly less bad, does not undo damage.
Nothing compensates for the industrialisation of open, low-lying, highly visible and highly valued countryside.

PART 2

Response to Phase Two Consultation for Cleve Hill Solar Power Station EN010085

Government's UK Solar PV Strategy and Planning Practice Guidance on Renewable & Low Carbon Energy, require proposals to be appropriately sited, give proper weight to environmental considerations such as landscape and visual impact, heritage and local amenity, and provide opportunities for local communities to influence decisions that affect them.

Landscape Institute's Guidelines for Landscape & Visual Impact Assessment (GLVIA) show site is very sensitive.

CPRE's Future Energy Landscapes methodology shows strong preferences about ownership, decision making control, distributive fairness underpin acceptance of energy infrastructure. 'Grounding in place' yields energy plans that that will work. Cannot be shortcut, needs to relate to realities, needs meaningful consent process.

Fencing and security lighting is highly intrusive

All ecosystems suffering from human intrusion, more species are being killed off: it is an apocalypse.

Endangered species cannot be replaced, especially the biome of the marshes.

Landscaping just as damaging as panels.

Red list species, very unusual for Nine bat species in the area.
Ecosystem Management better than species management.

Government's Environment Strategy aims to leave the environment in a better state than it is now.

Deutsche Bank economist, shows investing in protected areas produces benefit:cost ratio over 25-to-one.

Insufficient detail for rejecting alternatives – NSIP requirement.

CHS not only way to reduce carbon.

75% generation emissions reduction 1990 to 2017, Buildings 20% decrease, so improve buildings.

Climate Change Committee: “support the simple, low-cost options” - improving building insulation.

Solar PV lowest Load Factor average 10.8%, CHS similar to average. PV summer peak – demand lowest.

Wind LF over 30% & over 40% offshore, & far lower Land use.

Battery capacity 1/1000 of annual production- very small.

'Negawatts' eg replacing inefficient lighting/appliances reduces electricity consumption and carbon.

USA Energy saving three times cheaper than supply.

CHS does not reduce electricity cost but consumer installations reduce consumer costs.

Contravenes Planning Protections: “Applicant has been discussing the *possibility of disallowing legislation relating to the EA.*”

Flood Risk figures “depth of water around the site”, Hydrologists reference Ordnance Datum.

Inadequate noise assessment.

Mental health depends on Graveney Marshes - ‘mental health’ not mentioned in PEIR.

Community Consultation inadequate .

EIA ignores cumulative effects. Combination of everything in wider area important.

Changing energy market.

Increasing capacity on inter-connectors.

Competition - CHS less viable: not justifiable against impacts.

2016 -17: 596 events of transmission circuits disconnected, more than previous year. Such losses very serious for critical users.

81% of businesses had at least one power failure in past year. So more on-site backup increases reliability, reduces power quality issues. CHS wrong place: not close to businesses.

NG: Peak summer transmission system demand downward trend, less need for gas-fired generation. They expect falling demand on transmission system so transmission costs/MWh increasing, increases local generation incentive.

Market biased towards high cost supplies, more economic to help consumers use less energy.

Distributed energy and consumption means reduced transmission losses. Losses in transmission/distribution =7.9% of output from generators. Need generation near demand.

CHS has lengthy cables connecting panels to substation/grid – rooftop PV connect to point of use.

CPRE's A Countryside Friendly Smart Grid recommends: “aim to reduce reliance on wasteful centralised generation and transmission; ‘smart grid’ should encourage energy storage, renewable heat and small-scale, decentralised generation/microgeneration, feeding distribution network with incentives eg feed-in tariff; radically reduce consumption using of demand management, ‘smart metering’”.

Kent Council established Low Carbon Community network, supports community energy.

Community Energy schemes provide great benefits – reliability, reduced consumer costs.

Where better to spend a small part of a pension pot than to put in a solar water heater, PV electrics and a battery system, decoupling the household from soaring energy prices from the grid?.

EVs used as two-way stores – to power vehicle and supply house, also supplying Distribution Network, can improve the battery life. Used EV batteries provide battery back-up in house, reducing costs, better economics for system. Appropriate tariffs improve benefits.

How justify large single site rather than more resilient, economically and environmentally beneficial system of distributed sources renewables on buildings?

CHS does not reduce consumer costs, does not help local distribution network resilience.

If grid connection fails, CHS useless.

Converting excess capacity to hydrogen, injecting into gas grid, more efficient than battery storage, would displace fossil gas, and reduce the need for electrical heating use

No NG gas pipelines site, so moving CHS to a pipeline provides more flexible resource than NG connection.

20% Kent developed, high proportion, land loss serious for food, losses to housing developments.