I object to Planning Application WSCC/036/20 as presented for the following reasons which need to be addressed to make the application acceptable.
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**Operator:** When I visited visited the existing Viridor facility in 2019 and I it to be well managed with first class housekeeping.

**The Gasification Process:**
A proportion of the feedstock for gasification will be provided from Municipal Solid Waste (MSW) that is currently recycled by Viridor to fuel the gasification. Is it sustainable to burn recoverable material which should be recycled?

*Citation: Chartered Institution of Wastes Management (CIWM)*

> "Following preparation, the feedstock will be added into the gasifier, where the organic material is converted by partial oxidation into a mixture of 'syngas'. This is comprised of carbon monoxide, hydrogen and methane. Typically, the gas generated from gasification will have a net calorific value (NCV) of 4 - 10 MJ/Nm3. The calorific value of syngas from gasification is far lower than natural gas - between 10-25% (NCV) of natural gas. Syngas also needs to be cleaned to remove impurities such as sulphur, mercury, particulates and other trace minerals which can then be used for other chemical processes".

I note with interest Mr Hague's comment "this application is not for an R1 Gasification Process…". I have been able to find very little about gasification classification from the Environment Agency, DEFRA.or the EU. However I have been able to gain some insight to the process from *Waste Energy Systems, Louisiana* but it indicates that the process produces toxic residues requiring disposal outside the proposed facility.

*Citation: Waste Energy Systems, Louisiana ALISSA WOODS JUNE 10, 2015*

- "In the high temperature environment in gasification, larger molecules such as plastics are completely broken down into the components of syngas, which can be cleaned and processed before any further use.
- Dioxins and furans (toxins) need sufficient oxygen to form or re-form which incineration provides, and the oxygen-deficient atmosphere in a gasifier does not provide the environment needed for dioxins and furans to form or reform.
- Dioxins need fine metal particulates in the exhaust to reform; syngas from gasification is typically cleaned of particulates before being used.
- In gasification facilities that use the syngas to produce downstream products like fuels, chemicals and fertilizers, the syngas is quickly quenched, so that there is not sufficient residence time in the temperature range where dioxins or furans could re-form.
- When the syngas is primarily used as a fuel for making heat, it can be cleaned as necessary before combustion; this cannot occur in incineration (sourced from gasification.org)".

The USA Environmental Protection Agency (EPA) standards have been eroded under under the current regime and White House policy seeks to ease them further. Consequently the solutions offered by Waste Energy Systems will reflect this level of risk and and probably are a fair representation of any similar US supplied solution

I have been unable to find any EU guidance on the subject but would trust EU standards. We cannot afford to let safety standards slip, Thus any solution would need to be EU/UK-based and subject to EU Construction and use standards.

I infer from Ms Woods submission above that, fine controls are required to control the temperature and oxidation rates of the feedstock to avoid the production of dioxins and furans. Dioxins are a group of highly toxic chemical compounds that are harmful to health. They can cause problems with reproduction, development, and the immune system. They can also disrupt hormones and lead to cancer; dioxins can remain in the environment for many years.

Consequently the selection and operation of any plant needs to be approached with care, selecting a supplier with a proven track record validated under EU/UK operating standards, and with a serious attitude to risk management, plant failure and toxin containment: preferably a supplier and systems integrator from within the EU/UK and avoiding exposure of control systems to hostile states' influence..

**Feedstock:**

*Citation: Report by Fichtner Consulting Engineers for the client 2020 Terence O'Rourke Ltd 264101*

- "7.18 …. For this assessment, the 'alternative project design and assumptions' for the ERF will be sending the waste to landfill as this is the most likely alternative destination for the waste,… "

This is a flase assertion as Viridor currently recycle a very high percentage of the MSW delivered to the site.: balling paper/card, plastic and metal etc for resale. So the above statement skews the dependent business case and the proposal's 'R1 Recovery status'. *Waste Framework Directive (2008/98/EC) states that "For municipal waste incinerators this is based on a calculation of a plant's efficiency in converting tonnages of municipal waste to energy".*. Because this component of the feedstock is currently recycled today it should not be counted as a net benefit for this submission. - it needs to be removed.

*Citation: Report by Fichtner Consulting Engineers for the client 2020 Terence O'Rourke Ltd 264101*

- "7.51 With regards the extant consent for a gasification plant at the same site, the EIA for the gasification plant concluded a carbon benefit of approximately 28,560 tonnes of $CO_2e$ per annum compared to landfill. In comparison, the assessment for the proposed development has indicated a carbon benefit of approximately 74,449 $tCO_2e$ per annum compared to landfill. Therefore, the proposed development demonstrates an improvement in carbon benefits, and hence a greater significant positive effect, compared to the previously proposed gasification plant"

Again for the same reasons as above this is ignoring the current benefit from the existing Viridor operation and double counting it into this submission and so is incorrect.

**Future loading of the facility:** The proposal assumes MSW from a local area. It is predictable that the reasonable commercial interests of the operator would cause them to seek to operate a fully loaded operation. The likelihood is that this attractive facility would become a magnet for waste across the southern Coastway thus increasing the traffic movements and the volume of toxic solid waste for disposal to be transported tolandfill - where?

**Risks and Governance:**

The key risk to public health is is the failure of the toxic recovery and cleansing systems and the consequent emission of toxic gases into the atmosphere. Sensors and scrubbers would normally eliminate any significant risk. In the case of a failure the winds in the area are predominately south Westerly and so any emissions would move over the villages of Lyminster and Wick with the well understood effects of dioxins etc. How is this risk to be mitigated?

If the plant expands its sources of feedstock this will increase the the number of traffic movements above the planned level - How will this expansion be controlled. Any permission should be constrained by a pre-determined number of traffic movements

What provision wit be made for the secure movement of toxic ash? WSCC has a duty of care to know of and approve the target landfill site.

Who holds Governance for and is the Design Authority for the operation. Environment Agency? Self assessment is not adequate.

… and I support these comments from Mr Rod Hague

1. “They have failed to take the allocation of 1500 houses as part of a mixed development at Ford Airfield into consideration, apart from where it alters their Traffic Baseline to suite their position. The height, bulk and mass of the building and chimney are such that they could prejudice the viability of this allocation and the applicant's report on this matter is from an entirely different location and building and is therefore irrelevant. This would put pressure on Arun to find other less suitable sites for housing development”.

2. The Height, Mass and Bulk of this proposal, would be a seriously detriment to

- the aspect and setting of Listed Buildings including the Grade 1 Listed St Andrews Church
- the setting and environment of the SSSI at Clymping Beach
- the setting of Arundel and the Arun Valley
- The significant viewpoints mentioned by SDNP landscape study at both Monarch's Way and the Trundle and other prominent views in and out of the National Park and therefore against the NPPF

    The application does not demonstrate in the Landscape Assessment these important views.

4. Unlike the implemented permission this application is not for an R1 Gasification Process and this application therefore inherently a retrograde proposal for a more polluting and less energy efficient system.

5. The Application is contrary to many Policies in the NPPF and WSCC Mineral and Waste Plan, through its flawed Environmental Statement as well as against the new settlement policies with Arun DC Local Plan and the Ford Neighbourhood Plan.

In conclusion, there are many technical, commercial, environmental and governance questions yet to be addressed with regard to this application.

*FPC/ARUN Gasification WSCC/036/20*