

20/10/2020

Development of a Waste to Energy Facility, to operate in conjunction with other management operations within the Magħtab Environmental Complex.

Friends of the Earth Malta and Moviment Graffiti Recommendations

Friends of the Earth Malta and Moviment Graffiti have been issuing recommendations on the waste situation in Malta since 2001, alerting and calling out the government on an increasingly complicated situation. We have particularly been insisting on the importance of waste reduction as the first and foremost measure to manage Malta's waste. The implementation of a Waste to Energy plant is admittedly a better solution than landfilling and can be part of the treatment of waste in Malta but must not be seen as an eco-friendly solution. As Malta's per capita waste production is one of the highest in Europe and its recycling capacities are very low, the emphasis must be put on waste reduction. Furthermore, waste management projects must be sustainable and must consider the land and resource take-up they generate.

Preventing Waste Generation

FoE Malta and Moviment Graffiti believe that the focus must be put on preventing waste generation in the Maltese archipelago. We feel that this is not being underlined enough in the Project Description Statement (PDS). As the statement points out, the generation of waste has increased by 18% in 3 years (from 2014 to 2017)¹. Seeing as Malta has been struggling for a long time to manage its generated waste, it is fundamental to transition to a real circular economy. That would mean generating as little waste as possible, reusing materials to the greatest possible extent, recycling what can be recycled, and composting the rest. Indeed, the Maltese waste management strategy should focus on preventing waste, as in the top action of the EU's hierarchy of Waste mentioned in the PDS.

Since the PDS states that the WtE facility will help Malta move a step up the EU Waste Hierarchy (from disposal to recovery), we believe that even more ambitious action can be put forward to promote the prevention and reuse steps of that hierarchy. We recognize that some measures (e. g. campaign for public awareness; optimisation of industrial processes & product design, including material substitution; application of Polluter Pays principle) are proposed in the PDS to achieve that goal, but feel that these measures are extremely weak considering the task at hand. **Additional measures could be implemented such as:**

1. Introducing economic measures or polluter pays principle for businesses that are putting products on the market that are packaged in non-recyclable material.
2. Introducing economic measures or polluter pays principle for businesses that put products on the market that have secondary and tertiary packaging.
3. Financial incentives for businesses that generate little waste, use a circular economy model in their enterprise or offer packaging-free products to consumers.

¹ "It is pertinent to note that the rate of generation of non-hazardous wastes has increased significantly over the last years, rising from circa 245,000 tonnes in 2014, to 290,000 tonnes in 2017"

Focus on the Circular Economy and reduction of items entering the waste stream

Furthermore, measures should be taken to accentuate efficient reuse of items. **Repair café initiatives should be encouraged, and in that perspective, individuals should be allowed to collect reusable items from the civic amenities sites** if they feel that they can put them to use. Moreover, as was already promoted in 2018, mechanisms need to be put in place to ensure that discarding an item would be more costly for individuals and businesses than fixing it. In addition, we believe that electrical and electronic items could be sorted and that the recovered materials could then be exported. As part of the EU targets promoted by the newly proposed Circular Economy Package², Malta could also put in place some economic incentives that would encourage producers to support recovery and recycling schemes regarding the products they put on the market.

Deposit Schemes such as BCRS need to be implemented imminently and extended to other products

The Beverage Container Refund Scheme planned by the government must be implemented imminently, since this has not been done since the initial public consultation in 2018. As highlighted by the FoEM recommendations back in 2018, it is crucial to extend this deposit system to other products to ensure an increase in recycling percentage. These products could be further product-packaging material.

Incineration is not a green solution

Furthermore, albeit landfilling is not a long-term solution, neither is incineration, especially to reach the EU's 2050 Climate Neutrality target (zero-greenhouse emissions). It is equally important to underline that, contrary to what is suggested in the Coordinated Assessment, incineration is not a green solution. Even though incineration is presented in the EU plan as a possible solution, it remains a polluting process that would lead to considerable emission of greenhouse gases. Indeed, though FoEM is absolutely not promoting fossil fuel energy, it is important to note that electricity generated by waste incineration emits significantly more greenhouse gases than electricity generated through fossil gas, for instance (approx 340g CO₂eq per kWh). Furthermore, as a Zero Waste Europe report states, "the carbon intensity of energy produced through waste incineration (580g CO₂eq/kWh) is already about two-times greater than the current EU average electricity grid carbon intensity"³. Thus, it would be false to pretend that incineration is a sustainable solution producing renewable energy, as it will not help Malta reach the EU's carbon footprint neutrality objectives. How much GHG emissions will be caused by the new plant has not been presented in the PDS.

The smallest possible plant should be chosen as reaching EU recycling targets is key

We are concerned that insufficient effort is being made to reach EU recycling targets. If the waste treated by the plant will be 40% of MSW (i.e. the 120,000 stated in the PDS), this would still not be high enough to reach the EU 2035 target of 65% recycling rate.

² https://ec.europa.eu/environment/waste/target_review.htm

³ https://zerowasteurope.eu/wp-content/uploads/edd/2019/09/ZWE_Policy-briefing_The-impact-of-Waste-to-Energy-incineration-on-Climate.pdf

In the Coordinated Assessment Report on page 99, Option 2 is deemed more favourable, which would result in the building of a plant that takes feedstock of 192,000 metric tonnes instead of a smaller one of 120,000 metric tonnes, implying that there is no confidence that the EU targets are reachable by 2024. We understand that building only one line was considered too rigid but feel the size of the two lines is too important. We remain adamant that **the size of the plant should only be suited to the quantity of waste that will need to be treated when the EU's recycling targets for 2030 are met.** A bigger plant would be environmentally harmful in terms of take up of land and building resources, but also a superfluous expense of public money that could be used for better purposes such as implementation of better waste generation prevention measures.

The question of the **feedstock of the WtE plant** also needs to be addressed. As an incinerator needs a constant stream of stock to function, it does not, in its essence, promote reduction of waste flows, which means that it will not help us transition to a circular economy. Furthermore, running and maintaining the plant is costly. Therefore, the question of what can feed the plant and thereby, the use it can have in reducing the quantity of landfilled waste has to be raised to ensure that this project is as efficient and useful as possible. It is stated in point 84 that an approximate duration of 20 years would be necessary to provide a return on investment. FoEM and Moviment Graffiti would like to know **what measures would be taken to ensure that this does not disincentivize reduction of waste** i.e. of feedstock.

Furthermore, in the perspective of reaching the EU target, we feel that the destination of Malta's recycled waste should be made transparent, as this is not dealt with on the island. Indeed, albeit the reports do not mention it, we depend on exporting recyclables, and therefore, they should be shipped to plants as close as possible to Malta, for instance, to Southern European or Central European states. Since the variation of flux in the recycling markets can lead to difficulties in terms of dealing with recyclables, the emphasis should first and foremost, as previously mentioned, be put on waste reduction.

Further Analysis of Mixed Municipal Waste and recycling

Analysis of the mixed municipal waste that is currently being landfilled must be done prior to commissioning of the plant. Mixed municipal waste constituted 31% of waste landfilled and it would be vital to understand what components are in this and how they can be tackled, either through the MRF or MBT plants, but more importantly through the potential of the reduction of those materials from the market.

Furthermore, the **resources used as feedstock should only be resources that cannot be recycled.** According to a report issued by Zero Waste Europe in 2017: "A number of reports have highlighted the high proportion of recyclables in residual waste that could be either recycled or composted"⁴. **Organic waste collection from the food and restaurant industry** could constitute an excellent material for gas and compost production. For such a collection, care would have to be taken to insure that it is collected separately from extensive packaging waste generated by this industry.

Thus, **the construction of this new facility underlines the importance of recycling**, particularly if Malta is to reach EU targets of reducing municipal waste by 60% by 2030. Serious commitments need to be taken to separate waste both by those who generate it (individuals or businesses) and during the treatment of waste. The PDS presents a plan to do a "*review of collection strategies to optimise collection systems, and promote the collection of separate waste streams so as to optimise process flows, reduce waste separation costs, and reduce transportation costs*". Indeed, a review of the

⁴ As per quoted in the Zero Waste Europe report, see :

The report on Integration of environmental concerns in Cohesion Policy Funds (ERDF, ESF, CF): www.publications.europa.eu/en/publication-detail/-/publication/73061c4e-7aaa-11e9-9f05-01aa75ed71a1
The EIB Circular Economy Guide: www.eib.org/attachments/thematic/circular_economy_guide_en.pdf

efficiency of the recycling processes in Malta could give a perspective on the reality of recycling to know, for example, if individuals respect the colour codes of the different bags, and if these are then sorted properly. Additional action would then need to be put in place to **improve the recycling process in Malta, through measures such as:**

1. **Mandatory waste sorting by businesses and private enterprises** of any scale and size with penalties proportionate to waste generation by a business. This would require putting in place facilities and systems to ensure that this is possible for all businesses.
2. **Mandatory waste sorting by households.** Putting in place legislation and introduction of fines if recycling is not done properly. This should be put in place following an exercise which ensures that all households understand their responsibility to recycle. Penalties put in place should take into account the socio-economic background of the household with exemptions made to low income households. Fines are deemed necessary since recycling percentage has barely increased from 2011 to 2018 despite the public awareness campaigns. Checks can be done on a random basis to ensure that enforcement occurs.
3. Introduction of **more separate waste streams** to ensure that quality recyclable material does not mix with lower quality material.
4. **Financial incentives for businesses that generate little waste,** use a circular economy model in their enterprise or offer packaging-free products to consumers.
5. **Transparency with the public** in real time on waste generation by waste stream in different localities. This could incentivise localities to reduce their local waste generation.
6. Clear communication with the public on **what can and what cannot be recycled.** This is still unclear when it comes to composite material, plastics of a small size etc. Clearer communication is needed to ensure that non-recyclables are not put in the grey bag and vice versa.

Lastly, regarding the feedstock of the plant, we wish to underline that the use of the sewage for the treatment plants of Iċ-Ċumnija and ix-Xgħajra is going to entail quite a lot of energy for transport, and drying, and landfill space for the residue. That will therefore lead to a gap in the efficiency of the incinerator.

Design and components of the facility

It is noted that there will be a separate planning application process on the **IBA processing facility.** This is very worrying since if the IBA processing facility is not in operation when the incinerator starts operating, the facility will have to find a way how and where to store the dangerous unprocessed ash. This can lead to serious environmental and health hazards. Incinerator bottom ash should not be landfilled without processing.

Furthermore, regarding **landscape amenity,** Moviment Graffiti and FoEM recommend, where possible, that buildings should be designed with green walls and green roofs with a self-irrigation system.

Additionally, regarding **energy consumption,** the plant should be designed to produce its own electricity.

The risks of pollution caused by the WtE facility

FoE Malta and Moviment Graffiti also wish to underline inherent problems to this WtE facility, starting with the **diverse air, water, land and luminous pollution it will generate, damaging ecosystems and possibly threatening human health** :

1. Measures should be in place, even during the construction phase, to ensure that there is **no run-off rainwater** to the surrounding agricultural land in order to prevent leaching of pollutants.
2. **Real-time air monitoring stations** should be permanently installed in the following localities and data should be available online. Localities : Qawra, Magħtab Residential area, Naxxar, Baħar iċ-Ċagħaq, Pembroke.
3. Transportation plans of **Air Pollution Control residues (APCr)** should be in place in order to minimise the negative impact on the surrounding environment, especially when fly ash is being transported.
4. To mitigate pollution generated from the plant, emissions must be controlled strictly. The toxic emissions released could indeed lead to health issues such as cancer, and neurological and adverse birth outcomes. Therefore, to reduce its toxic emissions, the plant has to be **very well maintained**.
5. EIA rightly points out the inevitable result of the **generation of dust** during the construction phase. We stress the importance of environmentally sound construction practices during the construction phase and enforcement of such practices, which are usually lacking in Malta. The contractor should be fined and charged for damages if such practices are not strictly adhered to.
6. **Workers at the plant**, especially those who clean and maintain the pollution control devices, should have routine health screening for systemic toxicants, carcinogens and other pollutants. A health risk assessment framework should be implemented that includes a hazard assessment, a toxicity assessment and an exposure assessment.
7. **Pollution of the agricultural land:** There should be a plan for continuous monitoring for pollutants in the soil of the surrounding fields, through qualitative and quantitative testing.
8. **Light Pollution:** The documents lack specific information regarding light pollution prevention. That is particularly relevant considering that the coastal waters were protected for the presence of local breeding seabirds which approach the coast at night. Therefore, "*downward facing luminaries*" is not an adequate technical description and requires further specifications to ensure that a problem which can be easily remedied from the start does not end up as an additional source of pollution, especially during the 24hr operations of the plant.
9. **Sea pollution:** In section 5.4, Table 47 calculates that the development would result in very high run-off and negligible aquifer recharge, which will likely aggravate saltwater intrusion into the mean sea level aquifer and have potential negative effects on nearby terrestrial water bodies. Mitigation measures are needed to prevent this.

Marine ecology : Cooling system and their effect on Posidonia meadows

In terms of resources and practical implementation of the proposed facility, the issue of the water cooling system has to be solved. Considering the presence of Priority Habitats of *Posidonia* meadows and the internationally protected status of the coastal waters in which the pipes will be laid, we stress the importance of the sensitivity and of conservation of the site to be impacted. We agree with and reiterate the importance of the recommendation that "*the effect of the cooling waters on the marine environment – in terms of chemical and thermal pollution – requires further evaluation, particularly with respect to the*

effect on the extensive *Posidonia oceanica* meadows located in these waters.” Biocides used on site require long term monitoring, as does the thermal pollution considering that *Posidonia* is very sensitive to environmental changes. It has already been put forward⁵ that damaging the protected *Posidonia* meadows is not a sustainable and viable solution. Therefore, Friends of the Earth Malta and Moviment Graffiti are adamant that the government must present **a solution that will not damage marine or land ecosystems**. The discharge point of the cooling system should be located at a minimum distance of 1km from the shore to at least prevent warm water accumulation at Qalet Marku and Torri tal-Madliena seashore area. Furthermore, it is important that said discharge pipe be long enough to reach depths in which the *Posidonia* does not grow. Great care should also be taken when installing the pipes' draining in the cooling water. There should be a continuous monitoring plan on the marine environment and coastal waters in general.

Furthermore, we wish to point out that the report states that no sea uses were observed. However, if the area was only observed in May 2020 during a COVID lockdown, it is hardly representative of the site usage, especially when the nearby coast is a very popular windsurfing and snorkelling spot.

Impact on the environment and necessary mitigation measures

More generally, we wish to underline that general effects on surrounding ecosystems and the general environment need to be studied in detail. Indeed, the following points must be raised after having read the Coordinated Assessment:

- In Section 5.5, Table 48 on Water quality appears to be missing results whereas in a later section the report mentions high bacterial counts in groundwater (but values are not given).
- Section 5.5 also fails to mention the Natura 2000 site status of L-Għadira s-Safra.
- Section 5.6 on Ecology – study does not seem to have been multi-seasonal and may thus have overlooked certain species. **There needs to be greater focus on the following:**
 1. **Avifauna** – the site needs to be checked for breeding birds as well as for its importance as a stop along the migratory route and for housing numerous gull species on site (only *Larus ridibundus* is mentioned and the report states that it is not a protected species – this requires verification). This is especially important as the adjacent sea forms part of SPA as per the Birds Directive MT0000112 SPA as well as MT0000105.
 2. **Dry stone wall ecology** and all associated faunal species need to be given more attention (these include various protected species as well as nocturnal animals which may not be observed during a daytime site visit). The obliteration of dry-stone walls needs to be done sensitively and without heavy machinery in order for any species to be able to relocate nearby. We therefore suggest reuse of the stones as well as excavated material to create landscaping by natural mounds and rubble walls elsewhere along the border of the site to allow a nature corridor around the site and make up for the agroecosystem habitats and dry-stone wall ecology which will be lost in the process of this development.
 3. **Trees** on site: as much as possible, these need to be relocated rather than just replaced.
 4. The **excavated soil** should be transferred to the neighbouring agricultural fields and to disturbed sites so that they can then be managed by farmers that will have their land reduced due to the development.

⁵ <https://foemalta.org/press-releases/wte/>

5. **Agricultural land:** The Coordinated Assessment states a high risk of taking up agricultural land for WasteServ development, and as a mitigation measure suggests “*replacement of lost land or financial compensation*”. It is important to underline that minimal land needs to be taken up and compensation for land taken must be made in the first year of construction of the plant. Such payment should be calculated based on the losses the farmers will suffer for a number of years that crops yield and their income would diminish (i.e. not for only one crop season, but calculations need to take into account the number of years that the farmer would practise agriculture and the number of years of reduced income). Additionally, abandoned government land in the vicinity should be found and offered to the farmer as additional compensation so that they can eventually recover their crop yields. Work should be carried out to reduce the possibility of damages to water reservoirs, boreholes, greenhouses and other infrastructure that is deemed necessary to farming. Any damage done should be compensated by fixing damages immediately and compensating the farmers for any hindrance and losses they may suffer due to such damages.

Overall, the project to develop a Waste to Energy plant in Malta must not be seen as a perfect solution that would overlook the importance of drastic waste reduction needed. Additionally, further research in terms of feedstock, cooling system, incinerating capacity and environmental impact and pollution must be put forward.