



Zero Net Emissions by 2030

Mt Alexander Bioenergy

Introduction

This is a response to letter and paper from Dr Duncan Rouch which was widely circulated September 24.

The report attached to this letter, Castlemaine Bioenergy Project: Independent Review was described as a Working Paper.

This paper is generally supportive of the proposed project and MASG/MAB thank Dr Rouch for a generally balanced review. There are a few areas where Dr Rouch has based assumptions on out-dated or inadequate information, as well as unsubstantiated assertions.

MASG and MAB Committees of management regret that Dr Rouch made no attempt to obtain information directly from us or to fact check some assertions he has made about the project. This could have avoided some glaring errors and misrepresentations in the report and we hope these will be corrected in a subsequent draft. It is regrettable that the report in its current form has been circulated widely.

This response offers some clarification.

Clarifications

Aims

It is not correct to say that energy was a secondary aim of this project and that Don's waste management was the primary aim. The project was borne from an analysis of the renewable energy options that were identified in a resource mapping of the shire. Renewable Energy and greenhouse gas reductions were always the primary aims of the project. The process used to identify the bioenergy project, and its origin as a project looking more widely at renewable energy and greenhouse gas reduction, are clearly documented. Energy recovered from organic waste streams, which are regrown and replenished (such as food and timber waste by-products), is recognised nationally and internationally as renewable because the input streams are, in effect, continually renewed. The feedstocks for the proposed MAB facility will not include non-plantation or non-sustainable forestry wastes, so critiques of use of forestry biomass as 'non-renewable' are invalid. Dr Rouch suggests the greenhouse benefits from the project will decline as grid power and gas systems are replaced by renewable energy sources, but fails to recognise that the generation of renewables from the MAB facility is part of that energy substitution.

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Prescribed Industrial Waste (PIW):

Prescribed Industrial Waste, as defined by EPA Victoria as *Specific chemical, hazardous or dangerous wastes that according to the law must be handled and disposed of in specific ways*, covers a wide range of materials, including non-toxic food processing liquids and 'non-spadable' sludges that cannot be landfilled due to their contribution to leachate. The Anaerobic Digester (AD) may receive grease trap, biosolids, MAF, sludges, washwaters, liquid organics, filter cake, etc. that are all classified as PIW in that they cannot go to normal landfill. Thus the AD facility will take non-toxic PIW organics, but the pyrolysis and gasification plant won't, with a possible exception of biosolids should they go to it directly. Refer Biosolids section below.

Dr Rouch's report recognises the MAB project proposal excludes the receipt of toxic PIWs, but then concludes that market pressures will force MAB to drop the standards in the future and start accepting these wastes. No evidence for this assertion is made.

Dr Rouch incorrectly states that the thermal plant will receive PIW from other areas and this will impact on the reputation of Castlemaine. There is ample organic and non-PIW waste feedstock available in the region and there will be no pressure to drop these standards. The proposed technologies are not capable of processing most chemically hazardous wastes and these would contaminate outputs, so there is a strong market disincentive to receive these materials. MAB's planning and environment applications to EPA and council and EPA licence conditions will make it clear that the proposed facility will and will not be permitted to receive and environmental and quality management systems will exclude receipt of hazardous wastes. In simple terms; the facility is not designed to receive such wastes and therefore will not seek them as a feedstock.

Biosolids (ex Sewerage treatment)

While this is a possible source of feedstock it is not likely for the market reasons Dr Rouch suggests. One issue with these is that they could include chemical residues from pesticides, herbicides, and persistent organic pollutants (POPs) such as Polyfluoroalkyl substances (PFAS). The pyrolysis process would kill pathogens and destroy PFAS and common POPs. These would not be evident in the Biochar produced as Dr Rouch explains. Temperature and air emissions controls and monitoring would ensure that chemical contaminants are not emitted in exhaust from the combustion of gases from the pyrolysis process. Sourcing and management of feedstocks will avoid chemical contamination where they would risk toxic emissions or harm the marketability of biochar products.

Alternative Power sources for Don

Clearly MAB has no influence on the plans of DON for other sources of energy. However, from our Due Diligence point of view MASG/MAB considered a range of renewable energy options. We are aware that DON is working on a solar PV project as part of their Sustainability Strategy. As with any industry wishing to secure reliable and cheap energy we could expect that they will optimise and diversify their energy sources.

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The MAB project would displace a substantial amount of Don's natural gas consumption with our biogas and syngas supply. We will not directly supply electricity, although we recognise that Don have co-generation facilities that are used to create both steam (heat) and electricity. Our crystal ball tells MASG/MAB that electricity will become cheaper, as Dr Rouch suggests, as it is increasingly created by renewable sources. As a means of supplying heat, the MAB supplied gas will be very competitive into the future with the alternatives. Dr Rouch refers to the possible supply of green Hydrogen. In some respects, MASG/MAB are supplying green hydrogen as syngas has a significant hydrogen component. There are massive infrastructure costs faced by the provision of hydrogen through the piped network and this option may not be the best use of the fuel. I doubt whether the community would fancy the alternative of massive tankers of Hydrogen on the roadways. MASG/MAB feel we will be more than competitive with all sources, given our behind the meter direct supply. In the future, creating heat from renewable electricity is certainly foreseen as a long term trend, displacing gas as the tradition fuel used for heat, however the costs for the foreseeable future would rule this out for this scale of need. The availability of alternative fuel sources is an important **energy security** issue for Don and will continue to be so in the future. Given this facility will be fuelled by materials that would otherwise contribute to GHG emissions, it is a powerful and positive component of the energy mix.

Location

Dr Rouch has made the assumption that the facility could be located at the Castlemaine landfill. Although it is true the land zoning would probably be suitable, MASG/MAB would only have the option of converting the energy, acquired as a gas, to electricity with resulting energy conversion losses. MASG/MAB would be supplying to the grid at a significant capital connection and conversion cost. The nearby Coliban Water site would be a source of some feedstocks, however, some of this originates via the pipeline from the Don facility. The location adjacent to the Don facility gave MASG/MAB a behind the meter customer, for the fuel we most easily produce, and also provided a source of significant feedstock that would otherwise be trucked off site. The viability of the project is therefore considerably enhanced by the site selected.

MASG/MAB would note also that there is not much difference in terms of proximity to residential neighbourhoods between the sites.

Partner Organisations

Dr Rouch has listed **Coliban Water** as a partner. They were certainly a partner organisation in the Feasibility Study, as were Don Smallgoods and the Mount Alexander Shire Council. Following this MASG/MAB have engaged with the preferred site, Don Smallgoods and would not claim any partnership with any other organisations.

Dr Rouch also mentions **Welshmans Reef Winery** as a partner. MASG/MAB is not sure where this assertion comes from, and why this particular winery has been singled out and features in the conclusions and executive summary. All wineries may be potential suppliers of green waste. No particular winery has contributed to this project in anyway.

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Wood Chips

Dr Rouch has referred to wood chips and stated their use should be minimized. Dr Rouch asserts that woodchips will be needed to fuel the pyrolysis system, and implies these will have to come from forestry. There is no basis for this assertion and it demonstrates a lack of understanding of what is being proposed. It is regrettable that Dr Rouch made no attempt to seek clarification from MASG/MAB about the proposed thermal facility. MASG/MAB agrees that residues from non-sustainable forestry management should not be considered to be a renewable fuel, and does not propose to use these as a feedstock. . The proposed feedstocks include: clean timber and woody waste from timber manufacturing that are typically landfilled, single use shipping pallets, prunings and other residues from orchards, wineries and potentially plantations (which are currently often burnt in low temperature smouldering fires polluting local air quality) and potentially straw and other biomass crops (e.g. woodlots grown on farmland).

There is no intention to take wood chips from non-plantation forestry and it is unlikely to be financially viable to do so due to their alternative market values.

The conversion of woody biomass to renewable energy and biochar has significant greenhouse gas and other environmental benefits compared to current management, and the Environment Protection regulations requirement for demonstration of 'best practice' will ensure that the management options proposed achieve high resource use and environmental outcomes. The proposed management options are consistent with the waste minimisation hierarchy.

Traffic Movements

Dr Rouch proposes that Froomes Rd and Mary Street be used as an access routes. MASG/MAB don't believe that would be acceptable to the community and do not support expansion of commercial and industrial traffic via this route. The existing industrial traffic route of Walker St and Richards Rd would be the preferred option and included in supply contracts with those transporting biomass to the facility.

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