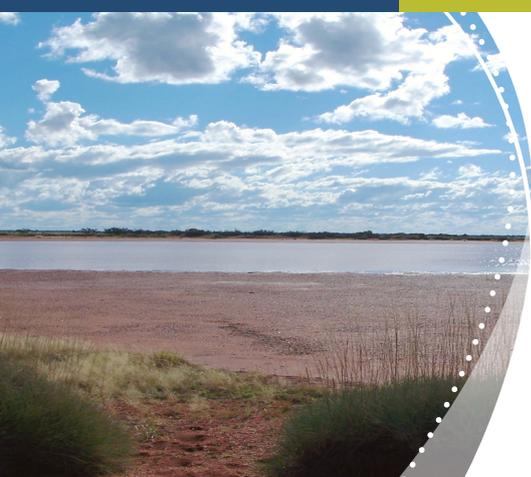




Report and recommendations of the Environmental Protection Authority



Resource Recovery Facility, Red Hill – inquiry under section 46 of the *Environmental Protection Act 1986* to amend Ministerial Statement 976

Eastern Metropolitan Regional Council

Report 1659

December 2019

Inquiry under section 46 of the *Environmental Protection Act 1986*

The Minister for Environment has requested that the Environmental Protection Authority (EPA) inquire into and report on the matter of changing the implementation conditions in Ministerial Statement 976 relating to the Eastern Metropolitan Regional Council's Resource Recovery Facility, Red Hill.

Section 46(6) of the *Environmental Protection Act 1986* requires the EPA Report to include:

1. a recommendation on whether or not the implementation conditions to which the inquiry relates, or any of them, should be changed
2. any other recommendations that it thinks appropriate.

The following is the EPA's Report and Recommendations to the Minister pursuant to s. 46(6) of the *Environmental Protection Act 1986*.



Dr Tom Hatton
Chairman

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1. The proposal

The Resource Recovery Facility (the proposal) is located within the existing Red Hill Waste Management Facility in the City of Swan. The proposal is to construct a facility to process waste to produce energy using either anaerobic digestion or gasification technology. The nominated proponent is the Eastern Metropolitan Regional Council (EMRC).

The Environmental Protection Authority (EPA) assessed the proposal at the level of Public Environmental Review and released its Report and Recommendations (Report 1487) in July 2013. In this report, the EPA considered the following key environmental factors relevant to the proposal:

- Air Quality
- Amenity (odour).

In applying the *Statement of Environmental Principles, Factors and Objectives* (EPA 2018a) these factors are now represented by:

- Air Quality
- Social Surroundings.

The EPA concluded in Report 1487 that it was likely the EPA's objectives would be achieved, provided there was satisfactory implementation by the proponent of the EPA's recommended conditions.

The then Minister for Environment approved the proposal for implementation, subject to the implementation conditions of Ministerial Statement 976 (9 July 2014).

Previously approved changes to conditions

On 14 November 2017, the Minister for Environment requested the EPA inquire into, and report on, the adequacy of operating conditions placed on all approved Waste to Energy (WTE) plants including the Red Hill Resource Recovery Facility. This inquiry also included investigations into the types of waste to be used by approved WTE proposals in accordance with the *Waste Avoidance and Resource Recovery Act 2007* (WARR Act). At the time of the request, a clear and consistent definition of 'residual waste' did not exist. A key aspect of the inquiry was to define 'residual waste' in accordance with the waste hierarchy under section 5 of the WARR Act, for the purposes of WTE proposals.

EPA Report 1623 (16 October 2018) concluded that:

- no new significant environmental factors had arisen since the original assessments for the proposal
- the addition and/or replacement of conditions is reasonable, implementable and is consistent with expected operating practices for WTE facilities.

Consequently, Ministerial Statement 1092 was published on 5 March 2019 and included two new conditions for the Red Hill Resource Recovery Facility:

- Conditions 10-1 to 10-4 (Residual Waste) – Including a definition of residual waste and the requirement to develop and implement a Waste Acceptance System Plan.
- Conditions 11-1 to 11-8 (Waste Acceptance and Monitoring) – Requiring the proponent to demonstrate that waste types not permitted for processing, detailed in Table 2 of Schedule 1 and Table 2 of Schedule 2, are not accepted or processed at the Red Hill Resource Recovery Facility.

2. Requested changes to conditions

Condition 3-1 of Ministerial Statement 976 states that the proponent shall not commence implementation of the proposal after the expiration of five years from the date of the statement (being 9 July 2014) and any commencement, within this five year period, must be substantial. The proposal has not yet substantially commenced.

In November 2018, the EMRC requested a change to condition 3-1 of Ministerial Statement 976 to extend the authorised timeframe for substantial commencement of the proposal for a further five years from 9 July 2019.

In response to the proponent's request, the Minister for Environment requested in January 2019 that the EPA inquire into and report on the matter of changing the implementation conditions of Ministerial Statement 976 for the proposal. This report satisfies the requirements of the EPA's inquiry.

3. Inquiry into changing conditions

The EPA typically recommends the Minister sets conditions on significant proposals that require them to be substantially commenced within a specified timeframe. Extending this timeframe requires the Minister to change the relevant conditions under s. 46 of the *Environmental Protection Act 1986*, and provides for the EPA to review and consider the appropriateness of the implementation conditions relating to the proposal.

The EPA has discretion as to how it conducts this inquiry. The currency of the initial assessment and issue of the Ministerial Statement (that is, when it was published) is also instructive in determining the extent and nature of the inquiry.

In conducting this inquiry, the EPA reviewed the information provided by the proponent and considered the original EPA assessment of the proposal detailed in Report 1487 and Report 1623. In considering whether it should recommend an extension of the authorised timeframe for substantial commencement of the proposal, the EPA considered whether there was any change to, or new information relating to, the key environmental factors relevant to the proposal. The EPA also considered if any new key environmental factors had arisen since its original assessment of the proposal.

In addition the EPA has also considered:

- any changes in environmental, scientific or technological knowledge that may have arisen since the initial assessment
- whether the proposal is being implemented using best practice and contemporary methods so that the EPA objectives for the key environmental factors are met.

EPA policy and procedures

In conducting this inquiry, the EPA has considered and given due regard to relevant current and former policy documents. The EPA followed the procedures in the *Environmental Impact Assessment (Part IV Divisions 1 and 2) Administrative Procedures 2016* (EPA 2016a) and the *Environmental Impact Assessment (Part IV Divisions 1 and 2) Procedures Manual 2018* (EPA 2018).

In February 2019 the WA Waste Authority released its Waste Avoidance and Resource Recovery Strategy 2030 (the strategy) with the vision of making Western Australia “a sustainable, low-waste, circular economy in which human health and the environment are protected from the impacts of waste”. To achieve this, three objectives to Avoid, Recover and Protect were set. Energy recovery from waste falls under the second objective and is considered under the strategy to be the least preferred of all resource recovery options. For this reason the strategy identifies that only residual waste is to be used for energy recovery.

4. Inquiry findings

The EPA considered that Air Quality and Social Surroundings are the key environmental factors relevant to the change to conditions. This determination is based on the potential impacts associated with the proposed technology.

4.1 Air Quality

The EPA's environmental objective for this factor is *to maintain air quality and minimise emissions so that environmental values are protected.*

EPA Report 1487

The proposal is located to the west of the existing Red Hill Waste Management Facility with the nearest residence approximately one kilometre to the south-east. Operation of the anaerobic digestion facility would produce air emissions from the gas engines' exhausts, the biogas burner and the flare. These emissions include oxides of nitrogen and sulphur (NOX and SO₂), carbon monoxide, Non-Methane Volatile Organic Compounds (NMVOC), and formaldehyde.

Gasification technology uses a thermal conversion unit to convert waste into a fuel gas. This fuel gas is then burnt to raise steam and produce electricity. The exhaust emissions from the steam boiler are vented through a stack and have the potential to impact air quality.

Air quality was considered an environmental factor in regard to both the anaerobic digestion and gasification options of the proposal.

A baseline air quality monitoring study was conducted between April and July 2011 to characterise the existing background levels of pollutants. Discrete campaign based monitoring was also conducted.

Air dispersion modelling was undertaken for both anaerobic digestion and gasification options, to assess potential impacts on air quality. Both direct and cumulative impacts were considered.

The EPA noted in Report 1487 that the results of the air dispersion modelling predicted compliance with the National Environmental Protection Measure (NEPM) standards for criteria pollutants at discrete receptors. Other pollutants including Non-methane volatile organic compounds (NMVOCs) and formaldehyde were found to meet relevant air quality standards and guidelines.

To manage these impacts, the EPA recommended the following conditions:

- Condition 8 Air Quality – to ensure that emissions from the anaerobic digestion facility are as low as reasonably practicable.
- Condition 9 Gasification Technology – to ensure that the gasification technology to be implemented is consistent with the EPA and the Waste Authority's strategic advice (*'Environmental and Health Performance of Waste*

to *Energy Technologies: Report No. 1468* under section 16(e) of the *Environmental Protection Act 1986*).

Condition 8 required that emissions from the anaerobic digestion facility be benchmarked against best practice. It also required the preparation of an Air Quality Report that set out emission rates and addressed normal operations, start up, shut down, and equipment failure conditions.

Condition 9 required the proponent to submit an independent peer review to demonstrate that the gasification technology is contemporary.

It was the EPA's opinion that the proposal could be managed to meet the EPA's environmental objective for air quality provided the recommended conditions were imposed.

Assessment of the proposed change to conditions

The EPA considers that the *Environmental Factor Guideline – Air Quality* (EPA 2016c) is the current environmental policy and guidance relevant to its assessment of the proposal for this factor.

The requested change relates to the timeframe for substantial commencement of the proposal and does not include any changes to either operational extent or methods.

Advice received from the Department of Water and Environmental Regulation (DWER), confirmed that the technology proposed in the original assessment is still considered contemporary. The EPA therefore considers that the current Ministerial Statement 976 conditions for the management of Air Quality (conditions 8 and 9) are still relevant to this change.

There have been changes to the air quality guidelines referenced in the original assessment, however these changes are not material and are not likely to impact the proposal. The proponent is required to submit an Air Quality Report (condition 8-2) prior to construction and this report will include reference to the most up to date guidelines (condition 8-3(1)) at the time of substantial commencement.

Condition 9 requires that the proponent ensure the gasification technology employed is consistent with EPA and Waste Authority strategic advice (9-1); and requires the submission of a peer review to demonstrate that the technology is contemporary (9-3).

In consideration of the information provided by the proponent, the existing management as required by Ministerial Statement 976 and relevant EPA policies and guidelines, the EPA considers that:

- there is no significant or additional information that justifies the reassessment of issues raised by the original proposal.

The EPA is therefore satisfied that the extension of Time Limit for Proposal Implementation for an additional five years continues to meet the EPA's objective for air quality.

4.2 Social Surroundings (Odour)

The EPA's environmental objective for this factor *is to protect social surroundings from significant harm.*

EPA Report 1487

The original assessment found that the organic waste to be processed was inherently odorous and the facility had the potential to emit odours. To minimise odour potential, the facility would be maintained under negative pressure, with all odorous exhaust air treated through a biofilter (anaerobic digester option) or a combustion chamber (gasification option).

Site specific odour monitoring was undertaken in January 2011 to determine odour emission rates for all odorous sources at the existing Waste Management Facility. Monitoring outcomes concluded that major sources of odour were the greenwaste windrows and the landfill gas engine exhausts.

Dispersion modelling using site specific meteorological data was used to predict cumulative impacts from the existing operation and both proposed options. The predicted cumulative odour impacts were dominated by the existing operations at Red Hill and neither the proposed anaerobic digestion facility nor the gasification technology would significantly increase odour impacts.

The EPA considered that in order for cumulative odour impacts to be considered acceptable, the proponent would need to reduce existing odour emissions.

To manage these impacts, the EPA recommended the following conditions:

- Condition 6: Odour - Existing Operations: The proponent shall reduce the cumulative odour levels prior to operation of the anaerobic digestion or gasification facility.
- Condition 7: Odour Control System: The proponent shall ensure that maximum odour emissions from the anaerobic digestion facility are less than those listed in Column 3 of Table 2 in Schedule 1 (of Ministerial Statement 976).

The EPA determined that the proposal could be managed to meet its environmental objective for amenity provided the recommended conditions were imposed.

Assessment of the proposed change to conditions

The EPA considers that the *Environmental Factor Guideline – Social Surroundings* (EPA 2016d) is the current environmental policy and guidance relevant to its assessment of the proposal for this factor.

As with air quality, advice received from DWER, has confirmed that the technology proposed in the original assessment is still considered contemporary and therefore the current conditions of Ministerial Statement 976 are still relevant to this change.

Condition 6 of Ministerial Statement 976 requires the preparation and implementation of a Cumulative Odour Reduction Report, which involves the investigation of management measures to reduce the existing impact. Condition 6 also requires that a re-run of the odour emission modelling be undertaken to demonstrate an overall reduction in the predicted cumulative odour impacts.

Condition 7 of Ministerial Statement 976 directs the proponent to ensure that the odour emissions from the anaerobic digestion facility are minimised and appropriately managed. Condition 7 also requires an independent peer review of the detailed design of the odour control system.

In consideration of the information provided by the proponent, the existing management as required by Ministerial Statement 976 and relevant EPA policies and guidelines, the EPA considers that:

- there is no significant or additional information that justifies the reassessment of issues raised by the original proposal.

The EPA is therefore satisfied that the extension of Time Limit for Implementation for an additional five years continues to meet the EPA's objective for social surroundings.

4.3 Other conditions

EPA Report 1623

As part of the EPA Report 1623 inquiry, the EPA consulted with WTE operators and DWER, whose role it is to monitor compliance of implementation conditions at WTE facilities. The EPA also extended meeting invitations to the Waste Authority and the Western Australia Local Government Association. The purpose of the consultation was to determine an appropriate definition for residual waste which would align with the objectives of the *Waste Avoidance and Resource Recovery Act 2007* and the *Waste Avoidance and Resource Recovery Strategy 2030*.

After consideration of information provided by DWER, the EPA provided a draft definition of Residual Waste to WTE proponents for comments. Following the receipt of comments and further discussions with DWER, the Waste Authority and the proponents and following the completion of EPA Report 1623, a definition of Residual waste was provided as:

'Waste that remains after the application of a best practice source separation process and recycling systems, consistent with the waste hierarchy as described in section 5 of the Waste Avoidance and Resource Recovery Act 2007 (WARR Act), and the Waste Strategy approved or revised from time to time under the WARR Act.'

EPA report 1623 recommended that the Residual Waste definition be added to the Statement and that two additional conditions be included. Consequently Ministerial Statement 1092 was published on 5 March 2019 and included two new conditions for the Red Hill Resource Recovery Facility:

- Conditions 10-1 to 10-4 – Residual Waste - Including a definition of residual waste and the requirement to develop and implement a Waste Acceptance System Plan.
- Conditions 11-1 to 11-8 – Waste Acceptance and Monitoring – Requiring the proponent to demonstrate that waste types not permitted for processing, detailed in Table 2 of Schedule 1 and Table 2 of Schedule 2, are not accepted or processed at the Red Hill Resource Recovery Facility.

EPA Report 1623, concluded that:

- No new significant environmental factors had arisen since the original assessments for the proposal.
- The addition and/or replacement of conditions is reasonable, implementable and is consistent with expected operating practices for WTE facilities.

Assessment of the proposed change to conditions

The requested change relates to the timeframe for substantial commencement of the proposal and does not include any changes to either operational extent or methods.

Conditions 10 and 11 of Ministerial Statement 1092 are required to be implemented prior to commissioning of the proposal approved by Ministerial Statement 976 and as such would remain contemporary following the proposed extension for proposal implementation (this report). Therefore it is considered unlikely that the change will effect either condition 10 or 11 of Ministerial Statement 1092.

Ministerial Statements 976 and 1092 contain other conditions not related to the key environmental factors discussed above. The EPA recommends that these conditions remain unchanged.

5. Conclusions and Recommendations

Change to condition 3

The proponent has requested an extension to the Time Limit for Proposal Implementation for an additional five years. The EPA considers it is appropriate to extend the Time Limit for Proposal Implementation for a further 5 years being from 9 July 2019 to 9 July 2024.

Conclusions

In relation to the environmental factors, and considering the information provided by the proponent and relevant EPA policies and guidelines, the EPA concludes that:

- there are no changes to the proposal
- there is no significant new or additional information that changes the conclusions reached by the EPA under any of the relevant environmental factors since the proposal was assessed by the EPA in Report 1487 (July 2013)
- no new significant environmental factors have arisen since its assessment of the proposal
- the impacts to the key environmental factors are considered manageable, based on the requirements of existing conditions.

Recommendations

Having inquired into this matter, the EPA submits the following recommendations to the Minister for Environment under s. 46 of the *Environmental Protection Act 1986*:

1. While retaining the environmental requirements of the original conditions of Ministerial Statement 976 as amended by Ministerial Statement 1092, it is appropriate to change implementation condition 3, the authorised timeframe for substantial commencement of the proposal, and replace it with a new implementation condition extending the authorised timeframe for substantial commencement of the proposal by five (5) years.
2. After complying with s. 46(8) of the *Environmental Protection Act 1986*, the Minister may issue a statement of decision to change conditions 3-1 and 3-2 of Statement 976 in the manner provided for in the attached recommended Statement (Appendix 1).

References

EPA 2016a, *Environmental Impact Assessment (Part IV Divisions 1 and 2) Administrative Procedures*, Environmental Protection Authority, Perth, WA.

EPA 2016b, *Environmental Impact Assessment (Part IV Divisions 1 and 2) Procedures Manual*, Environmental Protection Authority, Perth, WA.

EPA 2016c, *Environmental Factor Guideline – Air Quality*, Environmental Protection Authority, Perth, WA.

EPA 2016d, *Environmental Factor Guideline – Social Surroundings*, Environmental Protection Authority, Perth, WA.

EPA 2018, *Statement of Environmental Principles, Factors and Objectives*, Environmental Protection Authority, Perth, WA.

Appendix 1: Identified Decision-Making Authorities and recommended environmental conditions

Identified Decision-making Authorities

The following decision-making authorities have been identified for the purposes of s. 45 as applied by s. 46(8) of the *Environmental Protection Act 1986*:

Decision-making Authority	Legislation (and Approval)
1. Director General Department of Water and Environmental Regulation	<i>Environmental Protection Act 1986</i> (Part V Works Approval and Licence)
2. City of Swan	<i>Planning and Development Act 2005</i> (Building and planning approvals)

RECOMMENDED ENVIRONMENTAL CONDITIONS

STATEMENT TO CHANGE THE IMPLEMENTATION CONDITIONS APPLYING TO A PROPOSAL (Section 46 of the *Environmental Protection Act 1986*)

RESOURCE RECOVERY FACILITY, RED HILL

Proposal: The proposal is to construct and operate a resource recovery facility within the existing Red Hill Waste Management Facility, City of Swan, for the processing of waste to produce energy, using either anaerobic digestion technology or gasification technology.

Proponent: Eastern Metropolitan Regional Council
Australian Business Number 89 631 866 056

Proponent Address: 1st Floor Ascot Place
226 Great Eastern Highway
BELMONT WA 6984

Report of the Environmental Protection Authority: 1659

Previous Reports Relating to this Proposal: 1487, 1623

Preceding Statement/s Relating to this Proposal: 976, 1092

Pursuant to section 45 of the *Environmental Protection Act 1986*, as applied by section 46(8), it has been agreed that the implementation conditions set out in Ministerial Statement No. 976 as amended by Ministerial Statement 1092, be changed as specified in this Statement.

Condition 3 of Ministerial Statement 976 is deleted and replaced with:

3 Time Limit for Proposal Implementation.

- 3-1 The proponent shall not commence implementation of the proposal after 9 July 2024, and any commencement, prior to this date, must be substantial.
- 3-2 Any commencement of implementation of the proposal, on or before 9 July 2024, must be demonstrated as substantial by providing the CEO with written evidence, on or before 9 July 2024.