NSW Energy from Waste Compliance Table

Energy from Waste requirements for NSW Environmental Trust Grant Applications

This document details the requirements for any grant application that will involve an aspect of energy from waste. It is divided into two main sections:

1. Requirements and evidence for a proposed facility that intends to produce a waste-derived fuel, including Refuse-Derived Fuel (RDF) or Process-Engineered Fuel (PEF)
2. Requirements and evidence for a proposed Energy Recovery Facility (as defined in the NSW Energy from Waste Policy Statement)

Notes:

a. **You are not required to complete and return the *Energy from Waste Compliance Table* with your application. The Environmental Trust will contact you if and when it requires this information.**

b. If your application involves an eligible waste fuel (as defined in the NSW Energy from Waste Policy Statement) project, you will be required to demonstrate compliance with all relevant elements of the NSW Energy from Waste Policy Statement.

c. If your application is under *Stream 2* of the *Innovation in Priority Problem Wastes Management Grant Program* and the proposed activities are below the licencing thresholds for all relevant activities in Schedule 1 of the *Protection of the Environment Operations Act 1997* (POEO Act), you may be required to provide certain information that is covered by the NSW Energy from Waste Policy Statement. The Environmental Trust will contact you if and when it requires this information.

d. If you have any questions about your grant application and the NSW Energy from Waste Compliance Table, please contact the EPA Waste Strategy team at: wastestrategy.innovation@epa.nsw.gov.au

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Energy from Waste Requirements for NSW Environmental Trust Grant Applications		Evidence: RDF or PEF production facility This is for a facility that will manufacture RDF, PEF or any other waste-derived fuel In order to satisfactorily demonstrate compliance, the evidence provided must be documented and verified. Personal statements are not appropriate evidence for the demonstration of compliance.
	Development consent	• Valid development consent from the appropriate consent authority allowing the construction and operation of a facility described in information provided to EPA
	Human Health Risk Assessment	• Provide to EPA if required by planning approval
	Social licence to operate - Public consultation	• Consultation or Engagement Plan • Records of consultation e.g. formal agendas, minutes, invitations, attendance sheets, dates, times of meetings and phone logs • Copies of information provided during consultation/engagement and how it was provided (printed document, verbal, via email etc.) • Method of identification and identified stakeholders • Details of who consulted with i.e. targeted groups through stakeholder identification, sensitive receptors, broader community • Log of issues raised and responses provided • Advertisements and evidence of communication with wider community • Records of engagement/consultation with business, council and planning agencies • Information provided outlines wastes received on site, storage, description of thermal process, residual wastes produced, handling and disposal of those wastes, emissions to air, emission control devices, compliance with air requirements, materials and energy produced and transport, emergency response and the timeline for planning, construction and operation
	Evidence that the facility meets current international best practice techniques	• Demonstration of how facility will be operated and perform at best practice standards • Details of monitoring equipment, location, specifications, instrumentation systems and management • Demonstration of how monitoring data and records will be managed • Risk assessments, plans and procedures should reflect normal, abnormal operations and emergencies for all parts and processes of the facility • Demonstration of how waste will be received, stored, and processed (as a material input and outputs) through plans, procedures, diagrams and other documents: ▪ Quality assurance and quality criteria protocols for managing contamination and risks ▪ Provide clear and accurate information on the amount (tonnes) of wastes received onsite, including unprocessed, processed and output materials ▪ Specifically address contingency procedures for contaminated waste, rejected loads and supply failures ▪ Outline management of all residual wastes ▪ Outline process for scientific testing and characterisation of all residual wastes

		• Demonstration that any facility that receives residual wastes generated by the RDF/PEF production facility has all necessary approvals to receive, process and/or dispose the waste * See Resource Recovery Criteria also
	Evidence to demonstrate that any facility receiving waste derived fuels/outputs has all necessary approvals to receive and process the material	• If the energy recovery facility intends to send PEF/RDF or any other waste-derived fuel to a facility in New South Wales it must demonstrate that the receiving facility: ▪ has all necessary approvals to receive and process (if applicable) the output ▪ if it is used as a raw material substitute or in a non-thermal process, that the facility has all necessary approvals to receive and process the material ▪ if it is used in a thermal process (as defined in the EfW Policy) that the facility is an approved energy recovery facility • If the energy recovery facility intends to send PEF/RDF or any other waste-derived fuel to a facility outside New South Wales for use as a fuel or in a thermal process, it must meet the following requirements: ▪ Demonstrate that the facility outside NSW has: - all necessary planning permissions from the relevant authorities in the jurisdiction(s) in which the facility is located - all necessary environmental permits, approvals or licences from the relevant authorities in the jurisdiction(s) in which the facility is located ▪ Take reasonable steps to ensure that the operators of the facility outside NSW provide sufficient information on an ongoing basis regarding the facility's ongoing compliance with the Planning Permissions and Environmental Approvals for the life of the funded project ▪ Notify the Environmental Trust if it becomes aware that the facility outside NSW fails, or has failed to, comply with their Planning Permissions and Environmental Approvals and provide details of any non-compliances
Technical Criteria	Facilities in NSW producing RDF/PEF will be required to demonstrate the content of halogenated substances in waste and waste derived fuels.	• Data to demonstrate the expected content of halogenated substances in all RDF/PEF or waste-derived fuels produced by the facility • Outline process for ongoing scientific testing to demonstrate the content of halogenated substances in all RDF/PEF or waste-derived fuels produced by the facility
	Satisfy at a minimum the requirements of the Group 6 emission standards within the Protection of the Environment Operations (Clean Air) Regulation 2010 (if applicable)	• Air quality impact assessment (AQIS) addressing emission points and fugitive emissions (if applicable)

Resource Recovery Criteria	Demonstrate that material received is only from “authorised” waste facilities or collection systems that meet the criteria outlined in Table 1 of the EfW Policy	• Provide contract or supply agreements, draft agreements • Information of the specific sources of wastes, processes waste has been subject too, and bin system/s details if MSW • If proposing to use C&I there is no limit, however prior approval from the EPA is required • Demonstrate with descriptions, diagrams, waste classification, descriptions photos, tests results etc.
	If the proponent requests consideration to increase the maximum allowable percentage of mixed-waste residuals, EPA approval is required	• This will be assessed on a case-by-case basis, and requires prior approval from the EPA
	Demonstrate how waste streams will be managed so they do not contain contaminants such as batteries, light bulbs or other electrical or hazardous wastes	A management plan for the receipt and processing of waste that includes standard operating procedures that ensure hazardous materials do not enter waste stream for energy recovery e.g. batteries, asbestos. This may include information such as: • procedures for visual inspection of incoming loads, how will this been done • unloading inspections • cameras, photos and other evidence • procedures for loads suspected/containing prohibited material • staff training for all receipt of waste procedure • rejected loads register • protocols for sampling waste loads • processing equipment for selection/removal
END OF REQUIREMENTS SECTION FOR PEF/RDF PRODUCTION FACILITY		

Energy from Waste Requirements for NSW Environmental Trust Grant Applications		Evidence - Energy Recovery Facility This is for a facility that will thermally treat waste or waste-derived materials (including RDF and PEF) In order to satisfactorily demonstrate compliance, the evidence provided must be documented and verified. Personal statements are not appropriate evidence for the demonstration of compliance.
	Development consent	• Valid development consent from the appropriate consent authority allowing the construction and operation of an Energy Recovery Facility as described in information provided to EPA
	Human Health Risk Assessment	• NSW Energy Recovery Facilities will need to complete HHRA including HAZOP
	Social licence to operate - Public consultation	• Consultation or Engagement Plan • Records of consultation e.g. formal agendas, minutes, invitations, attendance sheets, dates, times of meetings and phone logs • Copies of information provided during consultation/engagement and how it was provided (printed document, verbal, via email etc.) • Method of identification and identified stakeholders • Details of who consulted with i.e. targeted groups through stakeholder identification, sensitive receptors, broader community • Log of issues raised and responses provided • Advertisements and evidence of communication with wider community • Records of engagement/consultation with business, council and planning agencies • Information provided outlines wastes received on site, storage, description of thermal process, residual wastes produced, handling and disposal of those wastes, emissions to air, emission control devices, compliance with air requirements, materials and energy produced and transport, emergency response and the timeline for planning, construction and operation
	Evidence that the facility meets current international best practice techniques in the following areas: • process design and control • emission control equipment design and control • emission monitoring with real-time feedback to the controls of the process • arrangements for the receipt of waste • management of residues from the energy recovery process	• Demonstration that the proposal is using the best available technology in reference to the Best Available Technology Reference document from the Waste Incineration Directive EU • Demonstration of how facility will be operated and perform at best practice standards • Details of monitoring equipment, location, specifications, instrumentation systems and management • Demonstration that monitoring meets requirements of the *NSW Energy from Waste Policy Statement* (EfW Policy) • Demonstration of how monitoring data and records will be managed • Risk assessments, plans and procedures should reflect normal, abnormal operations and emergencies for all parts and processes of the facility • Demonstration of how waste will be received, stored, and processed (as a material input and outputs) through plans, procedures, diagrams and other documents: - Quality assurance and quality criteria protocols for managing contamination and risks - Provide clear and accurate information on the amount (tonnes) of wastes received onsite, including unprocessed, processed and output materials - Specifically address contingency procedures for contaminated waste, rejected loads and supply failures

		- Outline management of all residual wastes including but not limited to wet scrubber residues, air pollution control dusts, lubricants, waste oils etc. - Outline process for scientific testing and characterisation of all residual wastes • Demonstration that any facility that receives residual wastes generated by the energy recovery facility has all necessary approvals to receive, process and/or dispose the waste * See Resource Recovery Criteria also
	Evidence to demonstrate that any facility receiving waste derived fuels/outputs has all necessary approvals to receive and process the material	• If the energy recovery facility intends to send outputs to a facility in New South Wales it must demonstrate that the receiving facility: - has all necessary approvals to receive and process (if applicable) the output - if it is used as a raw material substitute or in a non-thermal process, that the facility has all necessary approvals to receive and process the material - if it is used in a thermal process (as defined in the EfW Policy) that the facility is an approved energy recovery facility • If the energy recovery facility intends to send waste derived fuel to a facility outside New South Wales for use as a fuel or in a thermal process, it must meet the following requirements: ▪ Demonstrate that the facility outside NSW has: - all necessary planning permissions from the relevant authorities in the jurisdiction(s) in which the Facility is located - all necessary environmental permits, approvals or licences from the relevant authorities in the jurisdiction(s) in which the facility is located ▪ Take reasonable steps to ensure that the operators of the facility outside NSW provide sufficient information on an ongoing basis regarding the facility's ongoing compliance with the Planning Permissions and Environmental Approvals for the life of the funded project ▪ Notify the Environmental Trust if it becomes aware that the facility outside NSW fails, or has failed to, comply with their Planning Permissions and Environmental Approvals and provide details of any non-compliances
	Facility information to demonstrate that the technologies chosen are: • proven • well understood; and • capable of handling the expected variability and type of waste feedstock **Must have reference to fully operational plants using the same technologies and treating like waste streams in other similar jurisdictions**	* Representative data should be sourced from fully operational plants Appropriate representative data and evidence includes: • location of facility or facilities • environment protection licence equivalents and other operating approvals • details of processes and technology (including start up, operational level, shut down) • operational details including months operating, commissioning details, and details of major upgrades to plant (operational context) • details of the feedstock/waste, including characterisation, description, images and tonnes per day per waste stream • energy production details including heat recovery • compliance with local requirements • air emission details including modelling, actual emissions monitoring and details of control devices and identification of emissions monitoring points • complete emissions test report from a qualified professional, conducted at a reference facility, demonstrating testing methods compliance with NSW requirements • demonstration of waste material produced, including fuel characterisation, testing and fuel specifications (char, syngas and oils) • demonstration of waste residues for disposal, waste characterisation details (including residues from wet scrubbers)

Technical Criteria	The temperature of the gas raised, after the last injection of combustion air, in a controlled and homogenous fashion and even under the most unfavourable conditions to a minimum temperature of 850°C for at least two seconds (as measured near the inner wall or at another representative point of the combustion chamber).	• Demonstrate compliance with time and temperature requirements through process descriptions, diagrams, technical details to demonstrate compliance **NOTE:** torrefaction and pyrolysis processing temperatures are lower than other thermal processes. In these situations the emissions to air from the facility must meet these temperatures to manage risks to the environment and human health.
	If a waste has a content of more than 1% of halogenated organic substances, expressed as chlorine, the temperature should be raised to 1100°C for at least 2 seconds after the last injection of air.	• Demonstrate compliance with time and temperature requirements through process descriptions, diagrams, technical details to demonstrate compliance **NOTE**: torrefaction and pyrolysis processing temperatures are lower than other thermal processes. In these situations the emissions to air from the facility must meet these temperatures to manage risks to the environment and human health.
	Satisfy at a minimum the requirements of the Group 6 emission standards within the Protection of the Environment Operations (Clean Air) Regulation 2010	• Air quality impact assessment (AQIS) addressing emission points and fugitive emissions
	Evidence of continuous measurements of NOx, CO, particles (total), total organic compounds, HCl, HF and SO2	• Demonstrate how continuous measurement will be undertaken • Diagrams, drawings, equipment specifications, technical details, outline how data will be collated and accessed
	Continuous measurement data (as seen above) made available to the EPA in real-time graphical publication and a weekly summary of continuous monitoring data and compliance with emissions limits published on the internet	• Demonstrate how data will be made available in real time • Demonstrate how weekly summaries will be published on the internet for public access
	Continuous measurements of the following operational parameters: • temperature at a representative point in the combustion chamber; • concentration of oxygen • pressure and temperature in the stack • water vapour content of the exhaust gas	• Demonstrate how continuous measurement will be undertaken • Diagrams, drawings, equipment specifications, technical specifications and details or equipment and to be used, outline how data will be collated and accessed
	Monitoring and reporting to be conducted and held by the proponent for a period of three years	• Demonstrate through procedures, processes and record keeping tools

	Proof of performance (POP) trials to demonstrate compliance with air emissions standards	• Details of POP trials including a plan, timelines, processes, management, monitoring, responsibilities and reporting • Detailed information on the commissioning period of the facility, including but not limited to equipment testing, start-up fuel and operating conditions.
	Requirement (following successful POP trials) for at least two measurements per year of heavy metals, polycyclic aromatic hydrocarbons, and chlorinated dioxins and furans One measurement at least every three months shall be carried out for the first 12 months of operation. If and when appropriate measurement techniques are available, continuous monitoring of these pollutants will be required.	• Demonstrate how the six monthly and three monthly measurements will be undertaken • Diagrams, drawings, equipment specifications, technical specifications and details or equipment and to be used, outline how results will be collated and accessed. Includes descriptions and details of equipment, monitoring locations and technical consultants to be used
	Demonstrate a total organic carbon (TOC) or loss on ignition (LOI) content of the slag and bottom ashes that is not greater than three per cent or five per cent, respectively, of the dry weight of the material	• Demonstrate expected TOC or LOI of slag and bottom ashes through data, tests results and reference facility or facilities
	The facility include waste feed interlocks as required To prevent waste from being fed to the facility when the required temperature has not been reached either at start-up or during operation.	• Provide technical details and diagrams of the proposed waste interlock for the facility • Provide procedures, documents or plans for management of interlock
	Air Quality Impact Assessment in accordance with the Approved Methods for the Modelling and Assessment of Air Pollutants in NSW	• Demonstrate approved methods applied to AQIS and completed by suitable qualified professional

Thermal Efficiency Criteria	The net energy produced must be positive	• Demonstrate net energy is positive
	The facility demonstrates that at least 25 per cent of the energy generated will be captured as electricity (or an equivalent level of recovery for facilities generating heat alone)?	• Demonstrate at least 25% will be captured as electricity or heat
	The facility demonstrates that any heat generated by the thermal processing of waste is recovered as far as practicable. Including use of waste heat for steam or electricity generation or for process heating of combined heat and power schemes.	• Details of heat use on site, equipment and specifications
Resource Recovery Criteria	Demonstrate that material received is only from "authorised" waste facilities or collection systems that meet the criteria outlined in Table 1 of the EfW Policy	• Provide contract or supply agreements, draft agreements • Information of the specific sources of wastes, processes waste has been subject too, and bin system/s details if MSW • If propose to use C&I no limit, prior approval from the EPA is required • Demonstrate with descriptions, diagrams, waste classification, descriptions photos, tests results etc.
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	Does the proponent propose the use of char or ash for land application? Bio-char or char materials produced from facilities using mixed waste streams will not be able to be considered for land application as a soil amendment or improvement agent	• Demonstration that Resource Recovery Order and Exemption application is in progress with appropriate testing, analysis and information to meet requirements
END OF REQUIREMENTS SECTION FOR ENERGY RECOVERY FACILITY		