Additional Draft Comments
Draft Environmental Impact Statement
Non-Recyclable Plastic To Liquid Fuel Processing Facility
Hume, Section 21, Block 11
36 Couranga Crescent, Hume, ACT
Proposal Application Number 201600038

Lodged 01/11/2016 via email at epdcustomerservices@act.gov.au.
ACT Environment and Planning Directorate — Planning

The following comments should be read in conjunction with, and additional to, my initial submission lodged on 22/09/2016.

My initial submission raised, amongst others, concerns about pollutants and toxins in the gases and fuels to be produced by the proposed Hume pyrolysis factory, their local accumulation across southern Canberra's complex topography, and use of an inappropriate dispersion model to determine pollution distribution.

The present submission expands on this, and also highlights a disturbing pattern of misrepresentation, that seems systemic and pervasive to the extent that it has become circular regarding sourcing of pollution data in absence of a licence to pollute.

Sourcing of pollution data is emerging as a deceptive merry-go-round between the existing Berkeley Vale plant and the proposed Hume factory. It has become clear that the Berkeley Vale plant has not been approved by the NSW EPA for pyrolysis operations and so cannot legally have produced the pollution data on which the Environmental Impact Statement for the proposed Hume factory seems to rely, whereas the proposed Hume factory has been designated by the NSW EPA as the prospective source of pollution data on which approval of the Berkeley Vale plant's Development Application will have to rely.

The process could feature as a real-life, perhaps comic, example of a perpetuum mobile, were it not that the health and well-being of substantial populations in southern Canberra and southern Jerrabomberra are at stake.

(1) CALPUFF used for Berkeley Vale plant, but AUSPLUME for Hume factory

It has emerged that air quality modelling by Katestone for the Berkeley Vale plant, part of the Environmental Impact Statement for waste plastic-to-fuel pyrolysis (Development Application 2520/2004A) and also for the processing of 12000 tonne/year of co-mingled fuels (DA 2520/2004C) [37] (p 35), is based on the CALPUFF dispersion model.

The Berkeley Vale plant is described by FOY/Purdon as the prototype for the proposed Hume pyrolysis factory [22] (p 5). It is surprising therefore that air quality modelling by MJM Environmental for the proposed Hume factory is based instead on the AUSPLUME model [41] which is now regarded as outdated by its original developer, the Victorian EPA [40] [55].

It would have been cost effective for FOY/IGE to have Katestone extend their Berkeley Vale CALPUFF study to the proposed Hume factory. Comparison of pollution distribution outcomes for the two studies based on the same dispersion model would have been illustrative and could present a firm planning basis for pyrolysis factories envisaged elsewhere in eastern, southern and western Australia [4] [21] (p 27).

Katestone's CALPUFF study appears solidly professional. With much of the required model input data already on file, it begs the question why Katestone was not engaged to carry out also a CALPUFF study for the Hume location? It could hardly have been simpler! What led FOY/IGE to engage instead another, for them unproven, contractor, MJM Environmental, to carry out another, for them unproven, AUSPLUME study for the proposed Hume pyrolysis factory? The AUSPLUME study for the Hume factory had to be set up and executed from scratch and its outcomes are less than directly comparable to the CALPUFF study for the Berkeley Vale plant.

Changeover from more complex CALPUFF modelling to less sophisticated AUSPLUME modelling for a comparable pyrolysis facility in a far more complex topographic setting makes little sense. AUSPLUME is now generally regarded as an outdated pollution dispersion model and its application to the complex "Valley and Ridge" topography of the Hume location does not conform with the NSW EPA guidelines [40] [42], nor with requirements of the ACT EPD scoping document for the Hume EIS study [50], as elaborated hereunder.

(2) NSW EPA guidelines stipulate use of CALPUFF for HUME pyrolysis plant

NSW EPA guidelines [40] (p 21, 22) [42] (p1) strongly indicate that air pollutant modelling for a pyrolysis factory at the Hume location, *with its complex terrain, nightly inversion layering, terrain-induced air flow channelling and with sensitive receptors on terrain higher than the lowest release height*, should be based on CALPUFF modelling, not on the AUSPLUME model. Relevant extracts of NSW EPA's (2001/2005) "Approved Methods for Modelling and Assessment of Air Pollutants in New South Wales" [40] (p 21, 22) are pretty clear in this respect:

AUSPLUME v. 6.0 or later is the approved dispersion model for use in most simple, nearfield applications in NSW, where coastal effects and complex terrain are of no concern.

AUSPLUME v. 6.0 or later is specifically not approved for use in the following applications:

- *complex terrain, non-steady-state conditions: AUSPLUME is a steady-state model and is unable to adjust the winds to reflect the effects of terrain. The straight-line trajectory assumption of the plume model is unable to handle the curved flow associated with terrain-induced deflection of channelling. AUSPLUME should not be used for terrain where the height of any receptor exceeds the lowest release height.*
- *high frequency of stable calm night-time conditions: Pollutants can accumulate under such conditions or will flow downwind with the drainage flow.*
- *high frequency of calm conditions: AUSPLUME cannot handle calm conditions because of the inverse wind speed dependence plume equation.*

In circumstances where the AUSPLUME dispersion model is not approved or suitable for use, other dispersion models may be appropriate. Guidance on choosing appropriate alternative dispersion models can be found in the USEPA publication Guideline on Air Quality Models (USEPA 1999). CALPUFF and TAPM are the most commonly used alternative dispersion models for regulatory dispersion modelling applications in NSW.

CALPUFF is a multi-layer, multi-species, non-steady-state Gaussian puff dispersion model that is able to simulate the effects of time- and space-varying meteorological conditions on pollutant transport. This enables the model to account for a variety of effects such as spatial variability of meteorological conditions, causality effects, dry deposition and dispersion over a variety of spatially varying land surfaces, plume fumigation, low wind speed dispersion, pollutant transformation and wet removal. CALPUFF has various algorithms for parameterising dispersion processes, including the use of turbulence-based dispersion coefficients derived from similarity theory or observations.

CALPUFF has been accepted by the USEPA as a guideline model to be used in regulatory applications involving the long-range transport of pollutants (> 50 km). It can also be used o a case-by-case basis in situations involving complex flow and non-steady-state cases up to 50 kilometres from the source.

Clearly, in applying AUSPLUME rather than CALPUFF for pollution dispersion modelling, FOY's draft EIS has failed to comply with section 5.8.5 (2nd paragraph) of the scoping document (Notifiable instrument NI2016–332) [50]: *"Assess the potential impacts associated with emissions from the facility using NSW EPA Approved Methods for the Modelling and Assessment of Air Pollutants. Modelling is to be based on stack emissions meeting NSW Group 6 limits".*

(3) Pollution dispersion modelling of complex terrain requires high resolution DEM

Detailed topographic control is a basic requirement for proper pollutant dispersion modelling of complex terrain. For best outcomes a Digital Elevation Model (DEM) with the highest available resolution should be used. Environmental agencies (eg MJM Environmental [43], Katestone [37]) have tended to use the 9 second DEM with a grid spacing of about 250 m, even though grid spacings of 150 m to 90 m are nowadays recommended by the NSW EPA [42] (p 18).

A 1 second DEM with a resolution of about 30 m is available at low cost from Geoscience Australia [44]. Such a high resolution DEM is most appropriate for modelling pollution dispersion across the complex "Valley and Ridge" terrain of southern Canberra. As an interesting example, a 1 second DEM was used in a CALPUFF study by VIPAC for Hydro Tasmania in a near field pollution study for one of their substations using a set of diesel generators with stack heights of only 5.9 m [56] (p 12, 17).

Use of a high resolution DEM may require considerable processing resources but this is not really an issue with the very substantial processing power of current low-cost high-end

computing systems.

(4) Dispersion model shopping

With AUSPLUME now regarded as outdated and no longer supported by its main developer, the Victorian EPA, with AERMOD its recommended successor and with CALPUFF a recommended alternative for complex terrain, the question should be asked what dispersion models are commonly offered by environmental services providers? Do they have a full scala of models on offer, or is their expertise and services limited to one or perhaps two models? If they have multiple models on offer, would an outdated model like AUSPLUME be offered at lower cost as being marginally adequate for most circumstances? If they have AUSPLUME only on offer would it be offered at the lower cost end of the market in order to retain competitiveness with environmental services providers offering wider expertise?

As a corollary, would a company in dire need of a pollution study but short of cash, go model shopping for the most economic, yet purportedly still adequate, dispersion model service? In this respect, some explanation is warranted why IGE used CALPUFF for their Berkeley Vale plant module and why FOY used AUSPLUME for the same pollution modules in their pyrolysis factory proposed for HUME.

(5) Back to basics on dispersion modelling

It is imperative to not lose sight of basic requirements for an appropriate and adequate pollution dispersion study.

Firstly, representative pollution data have to be applied. In the present case:

- Pollution data for maximum allowed contamination of the waste plastic package. That is for a package containing 1% PVC/PTFE, 5% of PET, 15% of humidity and 5% of organic material;
- Pollution data for a package that is substantially more contaminated than the above package in order to model pollution in case such a highly polluted package would slip through screening procedures;
- Long-term average pollution data from representative, daily-processed, waste packages.

Secondly, pollution dispersion results from two or more models should be compared for consistency in outcomes.

Thirdly, a detailed 1 second DEM should be applied for proper representation of southern Canberra's and Jerrabomberra's complex terrain and the study should be extended to the north-south ridges around Fadden and Isaacs for insights in accumulation of pollution on their lee side under eastern winds.

(6) Leading pyrolysis company does not process PVC, PET and PTFE plastics

CYNAR, a leading UK/Ireland/Spain based pyrolysis company, specifically excludes PVC, PET and PTFE plastics from its feedstock[51]. CYNAR only accepts Low Density Polyethylene (LDPE), High Density Polyethylene (HDPE), Polypropylene (PP) and

Polystyrene (PS) as feedstock.

In contrast FOY/IGE's proposed Hume pyrolysis plant will accept up to 1% of PVC/ PTFE and/or up to 5% of PET plastics from their waste plastic supplier [48] (p 45). Such unsophisticated, lazy sorting of waste plastic should not be allowed for the proposed Hume plant, as PVC/PTFE and PET plastics are a likely source of toxic pollutants such as dioxins, furans, organohalogens and phthalates.

It appears from the video on CYNAR's plant in Ireland [53] that their sorting of waste plastic is an in-house job, which may explain the cleanliness of their feedstock compared with the contamination level allowed in IGE's feedstock supply contract.

It should also be noted from the images of CYNAR's plants in Spain (Almeria, Seville) [52] that their fractionation systems are far more extensive than the fractionation column for IGE's Berkeley Vale module. Presumably these more complex fractionation systems will be more capable to separate any toxic pollutants from the liquid fuels.

(7) Emissions monitored for diesel-fired, not LPG-fired, burners

It has emerged that Air Noise Environment has monitored emissions for the diesel-fired Hurl-Neway kiln burner at IGE's Berkeley Vale plant [37] (p 99-109). FOY's proposed Hume pyrolysis factory will use comparable burners but in an LPG-fired modification. At start-up these kiln burners will use bonafide LPG. When the system is up and running there will be a switch to "LPG" derived from the pyrolysis process. The cyclonic combustor likewise will be running on pyrolysis-derived "LPG".

There seems to be no pollution data recorded for firing the kiln burners and the cyclonic combustor with "LPG" derived from the pyrolysis process [41] (p 22). This is concerning. The "LPG" is bound to contain pollutants and toxins derived from the heated waste plastics, which is more properly described as "Liquid *Plastic* Gas" than "Liquid *Petroleum* Gas".

Demonstration that emissions from the *diesel-fired burner* at the Berkeley Vale plant are within NSW EPA guidelines is pretty much irrelevant. It will be important to demonstrate that emissions from the *"LPG"-fired kiln burners and cyclonic combustor* are within guidelines.

(8) Mismatch between size of pyrolysis factory and waste plastic supply

IGE's pyrolysis module has a processing capacity of 50 tonne/day of waste plastic. Canberra's supply of non-recyclable waste plastic is estimated at 15,000 tonne/year. A single pyrolysis module would be capable to process that supply in 300 days.

Why are four modules planned for the Hume pyrolysis factory? Why not a single module at Hume with the other three modules spread between waste supply centres in Victoria, NSW and southern Queensland?

Possible reasons that come to mind for such an oversized Hume factory vary from economic rationalism, avoidance of DA scrutiny, to abandonment of the landfill diversion goal and

maximising profits instead:

- Economy of scale of four kilns operating on a single site may outweigh the cost of long distance trucking of waste supplies;

- Local councils may be reluctant to approve pyrolysis development applications for reason of legitimate concerns about spread of pollutants, toxins, fire dangers, etc. Consequently, an approved development may be stacked to its maximum allowable capacity;

- The proponents may plan over time to substantially increase the processing of recyclable rather than non-recyclable waste plastics, foregoing benefits of landfill diversion for increased profits.

FOY may favour therefore the development of four-kiln, 200 tonne/day, pyrolysis factories at Hume and Berkeley Vale, with comparable factories on the cards for West Sydney, Victoria, South Australia and Western Australia [1] (p 27).

The odd one out seems to be the 1500 tonne/day pyrolysis plant planned by FOY's USA partner GEP Fuel & Energy LLC, initially planned for Port Arthur, near Houston, in Texas [2] [3] [4], but apparently recently (2016) abandoned and now possibly planned for Indiana [1] (p 27). Houston's population of 2 million is about five times that of Canberra and the population of Indianapolis is just over twice. Do the Houston and Indianapolis waste plastic supplies really require pyrolysis plants with a processing capacity thirty times that of the 50 tonne/day pyrolysis plant that would suffice for Canberra? Where would the non-recyclable waste plastic supply for the 1500 tonne/day pyrolysis plants come from? Trucked in from major cities in adjacent states? Or will theses plants go very hard for processing of recyclable, rather than non-recyclable, plastics and perhaps also for processing of rubber in order to maximise profits? Are DA approvals in the USA so hard to come by that any approved plant has to be scaled up to gigantic proportions, rather than opting for a more sensible distribution of single modular units spread across small local plants?

(9) FOY/IGE should clarify status of USA associate GEP Fuel & Energy LLC

Integrated Green Energy Limited (IGE) states that it *"has executed a Term Sheet with a USA based company, GEP Fuel & Energy LLC (GEP) to Design and Construct a 1,500 tonnes per day Plastics to Fuel Facility at Port Arthur, Texas."* [23].

The status of GEP Fuel & Energy LLC is unclear. An application was lodged on 06/03/2014 by the Indianopolis office of INCORP with the Texas Department of State for corporate registration of GEP Fuel & Energy LLC [5]. This registration was updated on 12/06/2014. However, subsequent updates, on 23/11/2015 and in 2016 (unspecified date), list the filing status of GEP Fuel & Energy LLC as "Forfeited" [6] [7].

It is unclear whether GEP Fuel & Energy LLC is registered for business in Indiana as implied in FOY's recent (23/09/2016) Investor Presentation [1] (p 27). The business address for GEP Fuel & Energy LLC (6191 Messina Ln apt 305 Cocoa Beach, FL 32931-5621) merely relates to an apartment in a luxury seaside condominium in southern Florida [8], whose claim to

fame may be that Cocoa Beach is adjacent to Cape Canaveral, ... where things take off, ... well most do!

There is contradictory information on GEP Fuel & Energy LLC developments in FOY's recent Investor Presentation (23/09/2016) and in the Frequently-Asked-Question section of the FOY Notice of Extraordinary General Meeting, Explanatory Statement and Independent Expert's Report (EGM) (14/10/2016). The September Investor Presentation [1] (p 27) specifies a 1500 tonne/day waste plastic-to-fuel pyrolysis plant in Indiana, but the November EGM report specifies a 1500 tonne/day plant proposed for Austin in Texas [45] (p 13, 31), despite GEP's licence being listed as "Forfeited" in Texas [6] [7]. Despite this "Forfeit" notice the EGM report [45] (p 33) states *"The [FOY] Board will continue the progress made with GEP Fuel & Energy LLC and work towards achieving revenue through the design, construction and operation of ten 1,500 tonnes per day plants being proposed for the USA"*.

The 2016 update [7] lists GEP's agent as the Austin (Texas), rather than the Indianopolis (Indiana), office of INCORP (INCORP SERVICES, INC. 815 Brazos St. STE. 500 Austin TX 78701). The Austin office seems to file company registrations in very rapid succession, 250 registrations in one and a half month (10/08/2016 to 23/09/2016) [9] [10] and this seems INCORP's strongly defended turf (*"InCorp will BEAT any competitor's price on ANY product or service!*")[11].

Google searches for GEP Fuel & Energy LLC failed to find any indication of a bona fide pyrolysis construction/operation company, which begs the question whether GEP Fuel & Energy LLC is little more than a USA shelf company?

(10) FOY/IGE should clarify relationship with Aerotang Pty Ltd

Integrated Green Energy (IGE) is proceeding to own, under a Property Purchase Agreement [45] (p 22), the site at 11 Apprentice Drive, Berkeley Vale NSW 2261, directly adjacent to 15 Apprentice Drive where IGE co-habitates with Aerotang Pty Ltd.

Aerotang Pty Ltd trades as Coast & Valley Oil, Coast & Valley Oil Recyclers and Coast & Valley Oil Distributors [25]. It seems IGE and Coast & Valley Oil share some facilities at the 15 Apprentice Drive site [26].

The owner of 15 Apprentice Drive Berkeley Vale, Mr Andrew Kelly, is the registrant for Aerotang Pty Ltd and Coast & Valley Oil [46] and is also a director of UTOF [45] (p 51). UTOF and BTOLA are development companies of the IGE shelf company.

Clearly there are strong management and operational links between IGE and Coast & Valley Oil. Given that the proposed FOY/IGE pyrolysis factory will occupy only about half of Block 11 of Section 21 in Hume, the question arises whether co-habitation and co-processing with Coast & Valley Oil is envisaged also for the Hume site.

Future co-habitation and co-processing by Coast & Valley Oil at the Hume site would increase truck traffic, throughput of flammable waste and fuels, and on-site fire risks.

(11) Did IGE properly communicate change to hot liquid & gas processing at BKV?
FOY/Purdon has repeatedly stressed that the IGE plant at Berkeley Vale is similar to the pyrolysis factory proposed for Hume and that no complaints have been obtained about its operation from the local Berkeley Vale community [22] (p 5 item 35):

"FOY Group operates a facility using the same equipment as proposed for the Hume site in Berkeley Vale NSW. During the period of operation, management is happy to report no environmental incidents and zero complaints from the community regarding the operation of the facility. It should be noted that the residential community in NSW are within 700m of the Berkeley Vale facility which is just over half the distance of the closest residents to the Hume facility, which is 1.32 km.".

This is a sophisticated misrepresentation. The IGE plant at Berkeley Vale may have *equipment similar* to that for the proposed Hume pyrolysis factory, but the Berkeley Vale plant has not been licensed for the *pyrolysis operation* proposed for the Hume factory [32] [36] [37], but **was** licensed instead only for separation of co-mingled fuels [36].

During 2015 and 2016 IGE lodged three development applications with the Wyong Shire Council for conversion of biodiesel facilities at 15 Apprentice Drive Berkeley Vale NSW 2261 to:

- (A) waste plastic-to-fuel pyrolysis;
- (B) separation of up to 1700 tonne/year of co-mingled fuels (slobs);
- (C) separation of up to 12000 tonne/year of co-mingled fuels.

(A) DA 2520-2004 A [32] (lodged 15/05/2015). This development application concerns conversion to a pyrolysis operation closely comparable to the four units proposed for the Hume factory. This DA was apparently publicly notified. Submission to the Wyong Shire Council was through a rather cavalier handwritten Development Application [33] and a Statement of Environmental Effects by Advitech which appeared short on detail [34]. A single objection was received from the Total Environment Centre [30]. This DA is still under assessment by the NSW EPA [32] [37] (p 10).

(B) DA 2520-2004 B [32] [35] (07/03/2016). This development application concerns use of the distillation, fractionation and drying facilities of the pyrolysis unit for separation of co-mingled fuels up to a maximum of 1700 tonne/year. This was regarded as a minor changeover from previous operations, requiring no public notification [31]. This DA has been approved by the Wyong Shire Council. The Newcastle (sic) EPA subsequently objected against approval by the Wyong Shire Council on grounds that the slobs are classified as liquid waste, apparently nullifying the Wyong Shire Council's consent [36]. IGE is appealing against this nullification of consent.

(C) DA 2520-2004 C [32] [36] (07/09/2016). This development application concerns an increase in slobs processing to 12000 tonne/year and is still under assessment.

FOY/IGE makes hay of lack of complaints by the local community regarding the Berkeley

Vale operation. However, it may be questioned whether the local community was properly informed about the scope and implications of conversion from centrifugal separation of liquids to pyrolysis operations involving distillation-heating to 400 °C and fractionation. Was it properly explained to the local community that changeover from cold liquid processing to hot gases and liquid processing could involve release, and probably additional production, of pollutants and toxins in both gaseous and liquid phases?

Waste oil processing has been going at the Berkeley Vale site since 1996 by Coastal and Valley Oil, with the owner of that company, Andrew Kelly, also the proprietor of the site [31] [37]. There may have been prior use of the site by a fuel merchant who apparently left a contaminated soil stockpile [37] (p 37). IGE has leased the off-road part of the site at 15 Apprentice Drive since November 2014. A predecessor of IGE, Australian Biodiesel Consultancy, leased the same part of the site from 2004 to 2006. The local community may not have known the finesses of these leasing arrangements and may have regarded the changeover to pyrolysis as just one incremental step in evolving the processing of waste oil and not worthy of much consideration, rather than as a fundamental, and potentially dangerous, change in operations.

FOY/IGE should clarify the extent of their notification and communication process regarding their Berkeley Vale plant redevelopment. Until such time they should refrain from using absence of expressed concerns regarding revamping of the Berkeley Vale plant as an argument to pre-empt legitimate concerns for the proposed Hume pyrolysis factory.

(12) FOY misrepresents patent ownership

FOY indicates in its latest investor presentation (23/09/2016) [12] (p 21) that two new patents are being acquired *"As a result of the adaption of proven technologies taken from various industries and their combination with* ***the two new patents being acquired****, FOY plastics to fuel technology has leapt to the fifth generation. This technology can now be considered the new foundation for the next generation of plastics to fuel technology.* ***Each of these two patents represent a major generational change, and combined they represent a major paradigm shift for this industry****."*.

FOY's patent acquisition is through its pending acquisition of IGE (Integrated Green Energy) [13] whose intellectual property resides in BTOLA [14] and UTOF [45] (p 12, 25, 51). However, IP Australia lists no current patents or current patent applications for BTOLA [15], instead it lists just one ceased Innovation Application, two lapsed Provisional Applications and three filed Provisional Applications. It appears there is no current patent and there has been no proper patent application by BTOLA, UTOF, IGE or FOY, contrary to what is suggested in the investor presentation [12].

Foy's Notice of Extraordinary Meeting, Explanatory Statement and Independent Experts Report [45] (p25) rekindles the impression of a forthcoming "prospective" patent *"BTOLA filed a single Australian provisional patent application in September 2014 which relates to an invention that uses a gas turbine to heat solid fuel materials, chemically altering the fuel to produce a high temperature gas and ash. This provisional patent application broadly applies to both the WPTF and BTE Technology (and may relate to the BTF Technology, which is in the early stage of development). However, the Directors believe that the value of*

*the Technologies lies primarily in the industrial copyright, trade secrets and know-how relating to the Technologies (Soft IP), rather than **the prospective patent**. FOY is in the process of having the Soft IP documented to preserve its value for future duplication of the BKV Commercial Plant and to protect against losing key management in the future.".*

A recent ABC article [54] (12/09/2016), covering a conversation with FOY's managing director Stuart Clark, spreads FOY's illusory patent claim a bit further *"The facility would be the first of its kind, **using new Australian-patented technology** to take the processing a step further than overseas facilities."*.

(13) FOY misrepresents ownership of Hume site

FOY paid a 5% deposit ($155.425) for Block 11, Section 21, Hume on 11/08/2016 in order ***to enter*** into a 99 year lease [20] (p 5).

FOY only paid a deposit on the block, it does not own the block. Yet it states in its recent investor presentation (26/09/2016) that it purchased the block from the Land Development Agency [21] (p 23).

(14) FOY misrepresents Andrew Wall – MLA for Brindabella

The managing director of FOY, Stuart Clark, has not been immune to the misrepresentation bug. Andrew Wall, Liberal MLA and Macarthur resident, visited the Berkeley Vale plant on invitation of FOY and Purdon. Clark's record in the Canberra Times [24] (30/09/2016) of Andrew Wall's opinion about the Berkeley Vale factory, differs substantially from Andrew Wall's:

"Liberal MLA for Brindabella Andrew Wall recently visited the company's other plant on the Central Coast. FOY Group managing director Stuart Clark said he believed Mr Wall's fears about the proposed Hume plant had been allayed after the visit. "I asked him, as a community person, if he was comfortable living near the plant and he said, 'Yes'," Mr Clark said.

However, when asked if this was the case, Mr Wall responded: "Seeing the [Cental Coast, Berkeley Vale] plant in operation allayed some concerns about the size and impact of such a facility, however, the proposal for Hume is considerably larger and the current community consultation process is still under way. "Many residents are still concerned about the emissions generated through the project and as a local member I'm listening to everyone involved," he said.".

A Macarthur resident reported (06/10/2016): *"I met Andrew Wall campaigning at Chisholm shops today. I asked him about the BKV and he said he was fine with its size and noise, both acceptable, but not fine with emissions and pollution. He has written to FOY to request that they quote him accurately, but they are continually misquoting him as happy with it all. He said if the Libs get elected they will get the Hume facility examined by independent scientists. He didn't know about the time extension for the draft EIS, but was pleased about it."*.

(15) FOY misrepresents quality of pyrolysed fuel

FOY/Purdon mentioned at the Rose Cottage consultation meeting (30/08/2016) that the pyrolysed fuel would be of Euro 4 quality.

However, FOY states in its recent EGM Notice [45] (p 32)

"Anticipated product: Fuel meeting Australian diesel and petrol standards (not biodiesel). The WPTF [Waste-Plastic-To-Fuel] Technology is designed to produce fuel that does not require further refining before sale to consumers" .

It is unclear what Australian fuel standards will be met. The pyrolysed fuel may well be of Euro 4 quality, but by the time the Hume factory may become operational Australia will have moved on to an Euro 6 emission standard (see section 16 of my initial submission lodged on 22/09/2016).

(16) FOY/IGE misrepresents operation of Berkeley Vale plant

FOY and MJM Environmental have modelled expected emissions from the proposed Hume pyrolysis factory on the apparent basis of pollution data for the Berkeley Vale plant [48] (p 82) and have tried to allay emission concerns arguing that the Berkeley Vale plant is closer to housing than the proposed Hume factory and that no complaints have been received from the local community [17] [22] (p 5). However, it has become clear that the Berkeley Vale plant had permission only to separate co-mingled fuels [16] and that a development application for changeover from a "Biodiesel processing facility" [18] to a pyrolysis operation is still under assessment [17] [27] [28]:

- [16] *"FOY Group has a processing plant that cleans co-mingled fuel at Berkley Vale, north of Sydney. "It's got neighbours that are less than half the distance away [than those from the Hume site] and it's got industrial neighbours that share a wall," Mr Clark said. "We've never had a single complaint, or emission from that building that they've complained about.""*.

- [17] *"A spokeswoman for Foy Group has previously tried to calm fears by pointing to a lack of incidences or complaints relating to the company's plant on the Central Coast. However, a Central Coast Council spokeswoman said Foy's Berkeley Vale site did not convert plastics into fuel. "The Foy Group have lodged a development application which seeks to build a plastics to fuel processing plant on the site, however this application has not yet been determined," she said."*

- [18]*"DA - 2520 / 2004A 15/05/2015 15 Apprentice Dr BERKELEY VALE NSW 2261 Bio diesel processing facility plus the construction of sheds over the plant and tank farm, parking and landscaping (Amended Application).*
  DA - 2520 / 2004B 07/03/2016 15 Apprentice Dr BERKELEY VALE NSW 2261 Bio diesel processing facility plus the construction of sheds over the plant and tank farm, parking and landscaping (Amended Application).
  DA - 2520 / 2004C 07/09/2016 15 Apprentice Dr BERKELEY VALE NSW 2261 Bio diesel processing facility plus the construction of sheds over the plant and tank farm, parking and landscaping (Amended Application)".

It has become clear from the above three DA's that IGE had been granted permission (02/06/2016) by the Wyong Shire Council to process co-mingled fuels up to 1700 tonne/year, but that this permission was negated by the Newcastle (sic) EPA. A subsequent request to process up to 12000 tonne/year of co-mingled fuels is still under consideration [19].

It has also become clear that the Berkeley Vale plant has not been, and is not currently, licensed for waste plastic-to-fuel pyrolysis. It is therefore unclear what the basis is, if any, for the pollution data used in the modelling by MJM Environmental for the proposed Hume factory!

(17) FOY/Purdon misleads on similarity of operations at Hume and Berkeley Vale

FOY and Purdon have chosen their words carefully to create the impression that the Hume factory will carry out the same processing as the Berkeley Vale plant, yet what they are to have in common for the immediate future is the *mere presence of similar equipment, not the processing of similar waste plastic* [22] (p 5):

"35. Are there any other similar facilities in other states or territories?
***FOY Group operates a facility using the same equipment as proposed for the Hume site in Berkeley Vale NSW**. During the period of operation, management is happy to report no environmental incidents and zero complaints from the community regarding the operation of the facility. It should be noted that the residential community in NSW are within 700 m of the Berkeley Vale facility which is just over half the distance of the closest residents to the Hume facility, which is 1.32 km."*

This is a sophisticated misrepresentation of current operations at the Berkeley Vale plant, apparently intended to deflect questions about dangers of pollutants and toxins that may be released from the proposed Hume pyrolysis factory.

(18) FOY/IGE misleads on DA inter-dependence of Berkeley Vale and Hume plants.

FOY has created the impression in its draft EIS for the proposed Hume pyrolysis factory that its pollution dispersion modelling is based on pollution data from the Berkeley Vale plant [48] [49]. Yet it has become clear from IGE's recent development applications [18] [19] for the Berkeley Vale plant and from FOY's recent EGM notice [45] that the NSW EPA for now has denied IGE permission for waste plastic-to-fuel pyrolysis operations at Berkeley Vale. Consequently, the basis for the AUSPLUME pollution dispersion modelling for the Hume pyrolysis factory by MJM Environmental [49] is now unclear.

It has also been clarified by FOY in a recent shareholder communication [45] (p 15, 16, 25): *"In relation to obtaining approval for the BKV Commercial Plant, FOY and IGE continue to be in discussion with the NSW EPA regarding the licensing requirements of the facility,* ***and have been advised that to operate the plant as a plastics to fuel conversion facility it will have to produce empirical data from a like plant in a like jurisdiction****. The FOY Board envisages the operation of the ACT facility will provide the baseline data that will assist with its NSW EPA approvals for the Berkeley Vale facility. ".*

Consequently granting of permission by the NSW EPA for pyrolysis at the Berkeley Vale plant is now likely to depend on pollution data from the proposed Hume pyrolysis factory.

Granting of permission for pyrolysis at both the Berkeley Vale plant and the proposed Hume factory is further complicated by a comparable like-like clause in the ACT EPD scoping document for the Hume EIS study [50] (p 11): *"A technology comparison of the plastics to fuel facility is to be conducted by independent consultations. The technology comparison to demonstrate proof of performance for the overall plant* ***(either show another plant operates in the same way using the same technology and achieves ACT emission standards or can demonstrate the proposed technologies separately have been proved and add up to achieving ACT emission standards)****. The independent peer review may require more than one type of consultant which will be dependant on a range of variables including whether similar plants exist, whether technologies are proven or unproven, feedstock types, emissions, plant design, management techniques etc".*"

In other words, the ACT Environment and Planning Directorate's approval for the proposed Hume pyrolysis factory may have to depend on pollution data from the Berkeley Vale plant, and this may well have been the trigger for creating the misleading impression in FOY's draft EIS that such data from the Berkeley Vale plant have been used indeed.

It seems FOY and IGE are now caught between a rock and a hard place, having wedged themselves squarely in a circular quest for pollution data for, and from, the Berkeley Vale plant and the proposed Hume factory with no outcome in sight any time soon.

(19) Hume pyrolysis operations will conflict with NSW energy from waste policy

The NSW EPA "Energy from Waste Policy Statement" sets out the considerations and criteria that apply to recovering energy from waste in NSW [38] [39]. It ensures this energy recovery:

- poses minimal risk of harm to human health and the environment;
- will not undermine higher order waste management options, such as avoidance, re-use or recycling".

It follows from my initial submission lodged on 22/09/2016 that anticipated operation of the Hume pyrolysis factory is likely to conflict with the above two NSW EPA criteria:

- Sections 3-25 of my initial submission indicate conflict with the minimal risk of harm criterion;
- Sections 27 and 30 indicate anticipated conflict with the higher order waste management criterion.

(20) FOY and IGE Development Applications trapped in merry-go-round

It should be clear from sections 16-18 herein above that FOY's and IGE's Development Applications are trapped in not one, but two, circular quests for pyrolysis pollution data, aptly visualised by the double merry-go-round in one of MC Escher's surreal lithographs (Figure 1):

- **EPD-EPA's pusher.** The ACT EPD indicated in its scoping study for the proposed

Hume pyrolysis plant that FOY's EIS needs to show from pollution data for IGE's Berkeley Vale plant, or a comparable operation elsewhere, that its operation is likely to be within acceptable bounds. However, the ACT EPD may not have been aware that the NSW EPA is withholding approval for IGE's proposed pyrolysis operation at their Berkeley Vale plant until pollution data from FOY's proposed Hume pyrolysis factory, or a similar plant elsewhere, demonstrate that its operation is likely to be within acceptable bounds.

- **FOY-IGE's spinner**. FOY has been misleading in their ACT draft EIS by implying that pyrolysis data for IGE's Berkeley Vale plant showed no pollution problems and by not revealing that proposed pyrolysis operations at IGE's Berkeley Vale plant had not been approved by the NSW EPA so that required pollution data could not possibly have been obtained in a legal way.

That leaves the not-materialised GEP Fuel & Energy LLC plant in Texas, USA, as a potential supplier of pyrolysis pollution data. FOY/IGE may push that, with an intended processing capacity of 1500 tonne/day, the GEP plant's pollution data should have some weight. After all, is not everything bigger and better in Texas? It is no wonder therefore that FOY/IGE is keeping the prospect of a GEP plant alive, whether in Texas (forfeited license) or in Indiana. But the prospective GEP plant for now has little more to show for than a mailing address in a luxury seaside apartment complex in southern Florida.

In reflecting on the present and my previous submission it seems that merciful euthanasia may well be the least painful option to assist FOY's troubled development application out of its self-inflicted misery.

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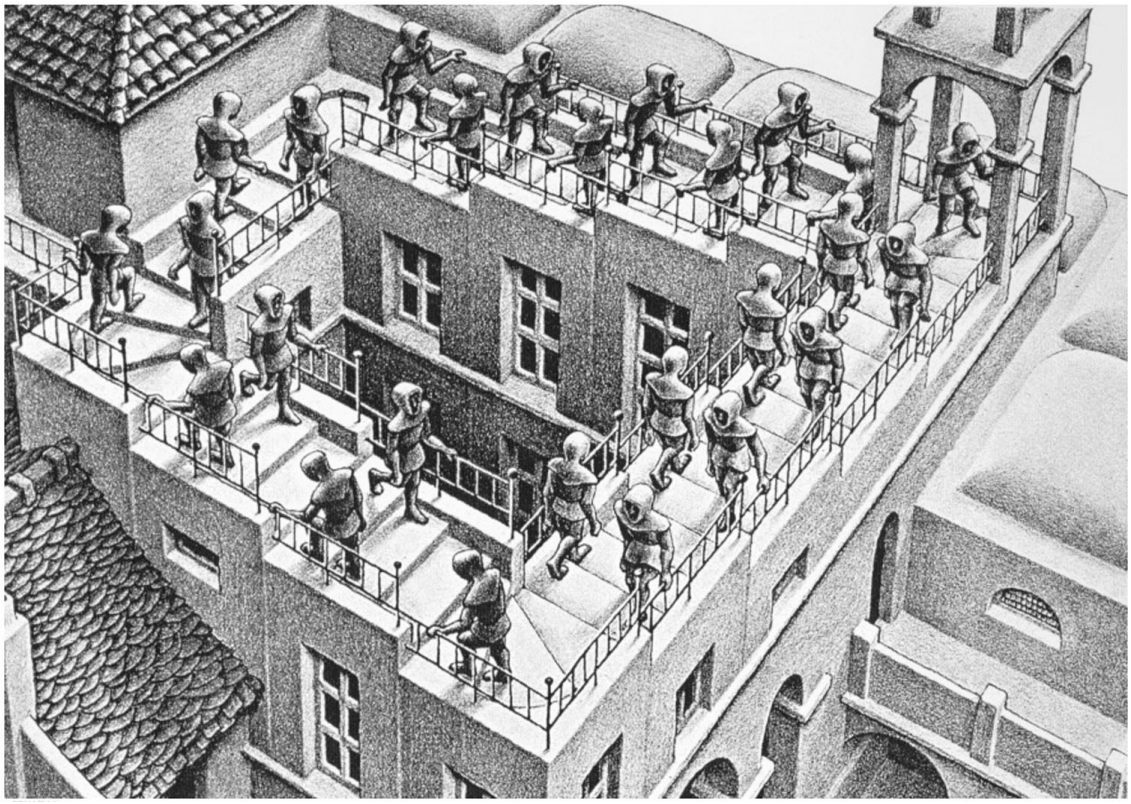

Figure 1 Central fragment of MC Escher's "Descending and Ascending" lithograph (1960), aptly illustrating a surreal, circular, interdependence of IGE's Berkeley Vale pyrolysis plant and FOY's proposed Hume pyrolysis factory in non-achievable pursuits for approval of their respective Development Applications, which are dependent on, yet absent, pollution data from each other's, not yet permitted, pyrolysis operations.