



# THE DIGITAL LANDLORD MANIFESTO

*How Australia stops being a pipe and starts being a pump*

Defugo Carbon REIT · The Digital Landlord Data Centre · Orivium Regenerative Mining

## THE CORE ARGUMENT

For every \$100 invested in a hyperscale data centre in Australia, \$70–\$80 leaves the country immediately. This manifesto makes the case that a vertically integrated model — Defugo Carbon REIT at the front, sovereign compute at the core, Orivium urban mining at the back — not only stops that leakage, it turns the data centre into the demand anchor for Australia’s largest-ever wave of regional job creation, renewable fuel production, and domestic critical minerals sovereignty. The numbers are in this document. They are Defugo’s own.

<p>HYPERSCALER RETENTION</p> <p><b>\$10–15</b></p> <p>per \$100 invested stays in Australia today</p>	<p>JOBES BY 2040 (DEFUGO ALONE)</p> <p><b>500,000</b></p> <p>UPP plants + farming + flow-on (Defugo white paper)</p>	<p>LAND NEEDED — FULL SELF-SUFFICIENCY</p> <p><b>&lt;1%</b></p> <p>of Australia’s land mass for full fuel self-sufficiency</p>	<p>CARBON ABATEMENT ACHIEVABLE</p> <p><b>62%</b></p> <p>of Australia’s total annual emissions from kenaf UPP</p>
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## 1. The Leakage Problem Australia Refuses to Confront

Australia is being sold an intoxicating headline: \$26 billion in baseline data centre investment by 2030, potentially \$52 billion more. Politicians call it one of the great economic opportunities of the era. The reality, documented by the Australian Bureau of Statistics, is more sobering.

### THE ABS FINDING THAT CHANGED EVERYTHING

The Australian Bureau of Statistics noted this year that the surge in data centre investment was “supported by a corresponding rise in imports, leading to a reduced impact on GDP.” Translation: the money is passing through Australia like water through a pipe.



## Where the money actually goes

When a hyperscaler builds its own facility, the IT equipment — servers, GPUs, networking — consumes 70–75% of total cost. Australia manufactures none of it. Every dollar flows to Nvidia, AMD, Broadcom and their East Asian foundries. Of the remaining 25–30% for the physical building, roughly another \$12–15 of every \$100 disappears offshore to Schneider Electric, Vertiv and others for power supply and cooling systems. What stays? About \$10–15, going to real estate, concrete, and local labour.

IT EQUIPMENT (GPUS, SERVERS) <b>70–75%</b> goes to Taiwan, US, East Asia	COOLING & POWER SYSTEMS <b>12–15%</b> goes to European equipment giants	STAYS IN AUSTRALIA <b>\$10–15</b> per \$100 — concrete, labour, real estate only
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## The tax problem compounds the leakage

Google earned \$8.4 billion in Australian revenue in 2022 and paid \$92.6 million in income tax. Equinix reported \$246 million in Australian revenue and paid \$6 million. Mining, by contrast, paid \$48 billion in company tax in 2023–24 — more than half of all tax from large corporates. The data centre sector employs just 11,500 people nationally. The promise of a productivity dividend requires policy choices that have not yet been made.

### THE ENERGY COST NOBODY IS TALKING ABOUT

Data centres consume 2% of Australian grid electricity today. AEMO projects this reaching 6% by 2030 and potentially 11% by 2035, representing 2.2–3.2 GW of operational capacity and up to \$135 billion in investment. Without matched renewable supply, wholesale electricity prices in NSW could rise by 26% by 2035. Consumers would pay for it. The Defugo model makes the data centre the solution to this problem, not the cause of it.

## 2. The Defugo C-REIT: The Energy Engine That Changes Everything

The Defugo Carbon REIT is not a financial instrument layered on top of a data centre. It is the energy and climate infrastructure that makes the data centre viable, carbon-neutral, and politically defensible. Its core technology — the patented Universal Processing Plant (UPP) combined with kenaf biomass farming — is documented, costed, and operational.

## Why kenaf is the breakthrough crop

Most renewable fuel programmes fail because they divert high-quality arable land away from food production. Kenaf solves this. It grows in low-quality, degraded soils that would not support food crops. It has a 90-day cropping cycle, reaching over three metres in height, and delivers 20 tonnes of biomass per hectare per crop cycle — with four crop rotations possible per year. It sequesters 20 tonnes of CO<sub>2</sub> per hectare per 90-day cycle through its deep root system. It requires minimal water and can draw moisture from the atmosphere. It does not compete with food production. It improves the soil it grows in.

### THE KENAF CARBON SEQUESTRATION NUMBER THAT MATTERS

A kenaf crop sequesters 20 tonnes of CO<sub>2</sub> per hectare per 90-day cycle — verified through research with the University of Sydney. At four rotations per year, that is 80 tCO<sub>2</sub>/ha/yr. This is the highest documented sequestration rate of any commercially scalable crop. It is the foundation of the C-REIT's carbon credit yield.

## What one UPP module produces

The UPP is modular and scalable. Each module has a daily capacity of 52,000 litres of renewable diesel equivalent, or around 4,500 kg of renewable hydrogen. Per module, per year (single shift, one crop rotation), the output is approximately 13.5 million litres of renewable liquid fuel or 1.2 million kg of renewable hydrogen, plus co-products.

Output from 1 tonne of kenaf stalk	Quantity
Syngas (40% of input)	400 kg — converted to hydrogen or liquid fuels
Hydrogen (H <sub>2</sub> )	160 kg per tonne biomass
Ammonia / Renewable urea (NH <sub>3</sub> )	240 kg — direct fertiliser substitute (\$8.4B Australian market)
Biochar	140 kg — stable in soil for 1,000+ years; contains high-grade graphene
Water recovered	0.5 tonnes per tonne biomass — process is water-positive
Hydrogen production cost	Below \$2/kg — the key economic breakthrough of the UPP

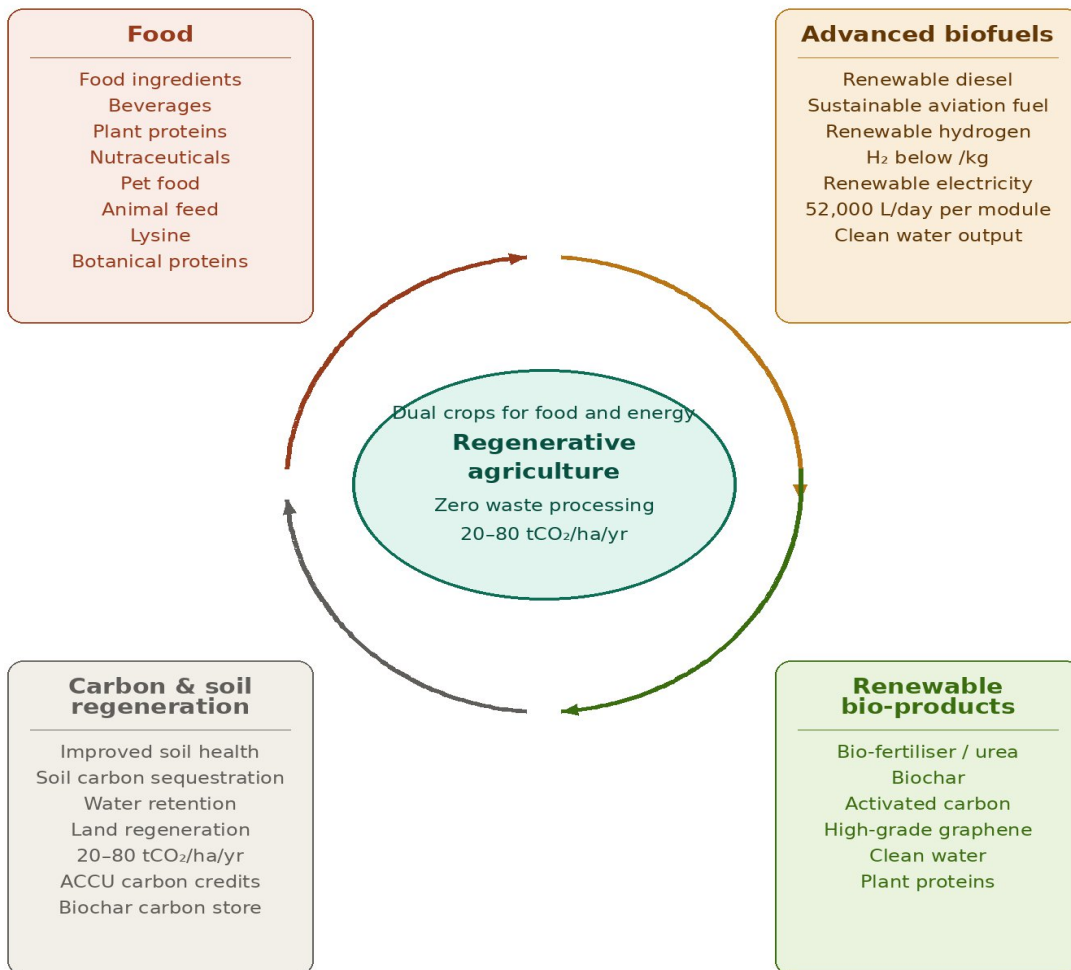
## The UPP advantage: why no competitors can replicate it

The UPP converts biomass to hydrogen and fuels without the Fischer-Tropsch process, catalysts, or fermentation. It uses pyrolysis in multiple reactors at 1,100°C powered by solar. The result is a fuel with 0.04% water content and 1.0% oxygen content — versus 30–35% for conventional biofuels. This is what gives the UPP's renewable diesel its drop-in properties. The

entire fuel production cycle using kenaf feedstocks and activated biochar as a soil amendment is carbon negative. It has zero waste, zero odour and no visible distillation towers — it can be located flexibly near farms and labour supply.

### THE CO-PRODUCT THAT FUNDS THE DATA CENTRE'S UREA SUPPLY

The UPP produces renewable urea as a direct by-product of the fuel process — no additional land, no additional kenaf required. Urea sells for around \$1,000/tonne. The Australian fertiliser market is valued at \$8.4 billion. Every tonne of urea produced by the C-REIT adjacent to a data centre is a tonne that does not need to be imported from Russia or China. This is sovereign capability and commercial yield simultaneously.



**Food · Fuels · Energy · Bio-fertilisers · Graphene · Water · Carbon credits**

### 3. Quantifying the Australian Opportunity: Land, Energy and Jobs

The Defugo Biomass to Energy White Paper (January 2024) provides the first documented quantification of what the UPP and kenaf model can achieve at national scale. Applied to the data centre context, the numbers are transformative. All figures below are sourced directly from the Defugo white paper unless otherwise noted.

#### How much land does Australia actually need?

One of the most important findings in the Defugo white paper is that the land constraint is not a constraint at all. Using kenaf at 20 tonnes/ha/90-day cycle, the following scenarios are modelled from documented Australian fuel consumption data:

Scenario	Land required (ha) / Key outputs
Replace 100% of Australian diesel (33.7B litres/yr)	3,482,000 ha — sequesters 139.3M tonnes CO <sub>2</sub> /yr, eliminates 90.3M tonnes emissions
Replace 100% of Australian aviation fuel (A1 Avgas)	500,579 ha — sequesters 20.0M tonnes CO <sub>2</sub> /yr
5% hydrogen blend into east coast gas network	181,848 ha — produces 239,748 tonnes H <sub>2</sub> /yr
Full self-sufficiency (diesel + avgas + ethanol + H <sub>2</sub> blend)	4,185,891 ha — less than 1% of Australia's 769M ha land mass
Abatement from full self-sufficiency scenario	301.4 million tonnes CO <sub>2</sub> /yr — equivalent to 62% of Australia's total annual emissions
Initial market entry (Qantas + Toll Holdings + BHP)	Only 180,682 ha — a negligible percentage of Australia's land mass

#### LESS THAN 1% OF AUSTRALIA'S LAND MASS TO ACHIEVE FUEL SELF-SUFFICIENCY

The Defugo white paper calculates that 4,185,891 hectares of kenaf cultivation — less than one per cent of Australia's 769 million hectare land mass — would make Australia fully self-sufficient in renewable diesel, A1 Avgas, ethanol, and a 5% hydrogen blend for the east coast gas network, while sequestering 167 million tonnes of CO<sub>2</sub> per year in the soil. Most of this land is already degraded agricultural land generating little economic return.



## The data centre as the anchor off-take: why the C-REIT is now bankable

The critical insight is that the data centre solves the C-REIT’s commercial viability problem. Renewable fuel projects have historically struggled to find guaranteed long-term off-take agreements at scale. A data centre adjacent to a C-REIT provides exactly that: guaranteed baseload demand for energy, clean water (the UPP is water-positive at 0.5 tonnes per tonne of biomass), and carbon credits for the facility’s compliance obligations.

<p>DATA CENTRE DEMAND FY25</p> <p><b>3.9 TWh</b></p> <p>Current Australian consumption (AEMO)</p>	<p>PROJECTED SHARE BY 2030</p> <p><b>6% NEM</b></p> <p>Rising from 2% today — guaranteed C-REIT off-take</p>	<p>PROJECTED CAPACITY BY 2035</p> <p><b>2.2–3.2 GW</b></p> <p>Up from 0.3 GW today (Baringa / AEMO 2025)</p>	<p>INVESTMENT PIPELINE</p> <p><b>\$135B</b></p> <p>By 2035 at upper scenario — the off-take market</p>
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## Jobs: the regional multiplier the current model completely ignores

The data centre sector currently employs 11,500 people nationally. The Defugo white paper models employment outcomes at each scenario level. These are not projections based on multipliers — they are bottom-up calculations from UPP module counts (35 direct jobs per module) and farm employment (15 people per farm per 52,000-litre module).

Employment scenario	Jobs created
Initial market entry (Qantas + Toll + BHP)	13,860 UPP production jobs + 5,940 farming jobs = 19,800 initial regional jobs
Australian self-sufficiency scenario	321,125 UPP jobs + 137,625 farming jobs nationally
20% of EU/Japan/Korea hydrogen export market (by 2040)	42,500 UPP jobs + 18,214 farming jobs = 60,714 additional jobs
Full UPP scale-out by 2040	Over 15,000 UPP plants nationally — approximately 500,000 jobs
Year-round employment structure	90-day kenaf cycle with staggered sowing and harvesting creates permanent year-round farm jobs, not seasonal
Flow-on regional jobs (not included above)	Transport, logistics, agronomy, equipment, rural services — typically 2–3x direct farm employment



**500,000 JOBS BY 2040 — FROM DEGRADED LAND THAT CURRENTLY EARNS NOTHING**

The Defugo white paper projects potential expansion to over 15,000 UPP plants and around 500,000 jobs out to 2040. These are not city jobs. They are in regional Australia, on degraded land, in communities that have been told for two decades that the digital economy has nothing for them. Every data centre that deploys the Digital Landlord model creates a farming catchment. Every catchment sustains a regional town. This is what large-scale decarbonisation actually looks like when the model is right.

**Regional economic output: the revenue case for farmers and communities**

Beyond employment, the Defugo white paper models the additional annual regional output by product type. These are the revenues that stay in regional Australia, paid to farmers for biomass and to operators for fuel and co-products:

Revenue scenario	Annual value
Renewable diesel for Toll Holdings + BHP (initial entry)	\$1.6 billion additional annual regional output
Renewable A1 Avgas for Qantas (initial entry)	\$76.6 million additional annual regional output
Full self-sufficiency — renewable diesel	\$54.4 billion annually
Full self-sufficiency — renewable A1 Avgas	\$5.1 billion annually
Full self-sufficiency — renewable hydrogen (5% gas blend)	\$483 million annually at \$2/kg
20% of EU/Japan/Korea hydrogen exports by 2040	\$7.3 billion new export revenue annually; \$5.3 billion in biomass sales to Australian farmers
Biomass sales to farmers (20% export scenario)	\$5.3 billion annually — direct farm income

## 4. Orivium: The Back-End That Closes the Loop

Orivium's Regenerative Mining Platform transforms the data centre's hardware waste stream into a domestic critical minerals supply chain. Its patented PCT ambient-temperature process recovers gold, silver, copper, palladium, rare earth elements and lithium from end-of-life servers and CPUs with zero toxic residues and green hydrogen as a co-product.

### THE URBAN MINE SITTING IN PLAIN SIGHT

A single tonne of discarded servers and circuit boards contains up to 300 times more gold than a tonne of gold ore — plus substantial quantities of silver, copper, palladium and rare earths. Australia currently exports this material to India, China and Africa as 'trash,' losing both the economic value and the strategic autonomy. Orivium recovers it domestically, without new land disturbance, without smelting, without a 15-year mining permit process, and with green hydrogen as a co-product.

Performance metric	Documented figure (Orivium case study)
CRM recovery value	~\$22,000 per tonne of processed material
ROI period	~2.5 years from deployment
Gold yield (per 20,000t facility)	~6,000 kg/year
Silver yield	~50,000 kg/year
Copper yield	~1,200 tonnes/year
Hydrogen co-produced	~1,000 tonnes/year
eWaste diverted from landfill	>18,000 tonnes/year
Water reduction vs acid leaching	80–90%
Deployment time	10–12 months from greenlight

The C-REIT appears as the financing vehicle in both the Defugo and Orivium documents. The same capital structure that funds the front-end kenaf farming and UPP operations can fund the back-end Orivium urban mining hub, with the data centre as the anchor asset generating both the energy off-take and the hardware waste stream.

## 5. The Strategic Case for Government

The political case for this model does not require ideological alignment. It speaks to three concerns that transcend party lines: economic sovereignty, regional employment, and climate credibility. And unlike most policy proposals, it comes with documented numbers, not projections.

### **Sovereignty: three crises, one solution**

- Australia imports 100% of its diesel — 30 billion litres annually — and holds only 20–30 days of reserve. The Defugo UPP can replace it with domestically produced renewable diesel at competitive cost.
- Australia exports critical minerals as eWaste, then buys them back as finished semiconductors. Orivium closes that loop without new mining.
- Australian data is increasingly processed offshore, making domestic AI capability dependent on foreign infrastructure. The Digital Landlord model provides the sovereign compute layer.

### **Regional employment: the numbers politicians need**

- 19,800 direct jobs in the initial market entry phase (396 UPP plants + farming), rising to 500,000 by 2040 at full scale.
- Year-round permanent employment — not seasonal — because the 90-day kenaf cycle is staggered on a daily basis, providing continuous feedstock flow and continuous income.
- Flow-on jobs in transport, logistics, agronomy, equipment and rural services — not counted in the above figures.
- Regional towns sustained by farming activity: schools, hospitals, retail, hospitality, professional services — the backbone of rural Australia that the digital economy has historically bypassed.

### **Climate: built-in, not bolted on**

- 62% of Australia's total annual emissions abated if the full self-sufficiency scenario is deployed — equivalent to all annual emissions from the electricity and stationary energy sectors combined.
- 20 tCO<sub>2</sub>/ha/90-day cycle sequestered in soil through kenaf's deep root system — verified, permanent, and additional to the emissions avoided by replacing fossil fuels.
- Carbon credits generated by the C-REIT are ICAO-aligned, Verra-verified, and blockchain-traceable — the highest international standard.
- The entire fuel production cycle is carbon negative when biochar is used as a soil amendment.

### THE ARGUMENT THAT WINS THE ROOM WITH BOTH SIDES OF POLITICS

The Digital Landlord model does not ask government for subsidies. It asks for preference: priority data centre development approval for operators that bring the full stack. In return, it delivers regional employment at a scale not seen since the mining boom, carbon abatement that meets the government's NDC commitments, fuel security that the IEA treaty requires, and a domestic critical minerals supply chain that defence and industry have been demanding for a decade. That is not a pitch. That is a policy offer.

## 6. The Financial Model: Running AI Over the Numbers

The Defugo white paper provides the base data to run a credible financial model across all three businesses. The following variables and scenario assumptions are drawn directly from documented sources.

Variable	Source and range
Kenaf yield per hectare	20 tonnes/90-day cycle — Defugo white paper / University of Sydney research
Carbon sequestration rate	20 tCO <sub>2</sub> /ha/90-day cycle — Defugo white paper
Hydrogen production cost	Below \$2/kg — Defugo UPP documented target
Hydrogen market price	\$4–6/kg current market; \$2/kg conservative export target
Renewable diesel yield per module	13.5 million litres/year (single shift, one rotation)
UPP module employment	35 direct jobs per module
Farm employment per module	15 people per farm per 52,000-litre module (ABARES data)
CRM recovery value (Orivium)	~\$22,000 per tonne processed
ACCU carbon credit price	\$30–35 current spot; \$50–70 forward 2030
Data centre energy demand	3.9 TWh FY25, projected 6% NEM by 2030 (AEMO)
Australian operator retention baseline	\$45–55 per \$100 before Defugo/Orivium overlay

### Scenarios to model

- Scenario 1 — Proof of concept: Single 100MW data centre + adjacent C-REIT + one Orivium facility. Land required, jobs created, blended IRR.
- Scenario 2 — Initial market entry: Scale to supply Qantas SAF + BHP diesel + Toll diesel. 180,682 ha, 19,800 direct jobs, \$1.68 billion regional output.



- Scenario 3 — Self-sufficiency: Full Australian renewable fuel self-sufficiency. <1% land, 458,750 direct jobs, 62% emissions abatement.
- Sensitivity analysis: carbon credit price  $\pm 50\%$ , hydrogen price  $\pm 30\%$ , kenaf yield  $\pm 15\%$ , data centre occupancy  $\pm 20\%$ .
- Comparison case: same capital deployed as hyperscaler vs Digital Landlord model. Tax contribution, jobs, GDP impact, emissions.

## 7. The Manifesto: Five Principles for a New Model

This is not a technology pitch. It is an infrastructure thesis — a new category of asset that did not exist before these three businesses were assembled into a single vertically integrated model.

### PRINCIPLE 1: THE DATA CENTRE IS THE DEMAND ENGINE, NOT THE PRODUCT

The facility creates the off-take demand that makes the C-REIT commercially viable: guaranteed energy purchase, guaranteed water purchase, guaranteed carbon credit demand, and a hardware waste stream for Orivium. Every megawatt of compute capacity is a megawatt of renewable energy demand and a tonne of future eWaste. The data centre is the flywheel. The C-REIT and Orivium are what it powers.

### PRINCIPLE 2: EVERY LAYER EARNS — AND EARNS MORE TOGETHER

Defugo earns from carbon credits, SAF, hydrogen, urea, biochar, plant proteins and graphene. The data centre earns from colocation leases, sovereign compute contracts and carbon-neutral premiums. Orivium earns from critical minerals, hydrogen and recycling fees. Each is viable alone. Together, the blended revenue floor exceeds \$100 per unit, with compounding ESG credentials that none of the three could achieve independently.

### PRINCIPLE 3: NOTHING IS WASTE

Australia currently exports critical minerals as trash, imports compute as a service, burns imported diesel in trucks and planes, and offsets carbon with credits of questionable integrity. This model turns eWaste into a domestic mineral supply chain, diesel dependence into sovereign fuel production, carbon liability into a yield-bearing investment product, and degraded land into Australia's most productive agricultural asset.

### PRINCIPLE 4: REGIONAL AUSTRALIA IS THE ASSET BASE, NOT THE AFTERTHOUGHT

The C-REIT's kenaf land base is in regional Australia, on degraded agricultural land that currently generates little economic return. Every hectare planted sustains a farming family, a regional town, and a carbon credit. The 90-day kenaf cycle provides year-round permanent employment — not seasonal — building stable regional populations in high-value supply chains that are non-offshorable by definition.

### PRINCIPLE 5: THE MOAT IS THE STACK, NOT THE TECHNOLOGY

No hyperscaler owns all three layers. No REIT manager has the data centre off-take secured at source. No recycler has the hardware waste stream. No carbon project has the energy and water co-production. The competitive advantage of this model is the integration. Defugo's UPP patent, Orivium's PCT process, and the C-REIT financing structure together



create a moat that is extraordinarily difficult to replicate — because it requires simultaneously being a farmer, a data centre operator, a fuel producer, a carbon certifier, and an urban miner.



## Conclusion: Australia Can't Miss This Twice

Australia missed the semiconductor wave. It missed the EV battery supply chain. It is at risk of watching \$135 billion in data centre investment flow through the country like water through a pipe — creating jobs in Taiwan, tax revenue in Ireland, and strategic assets in the United States.

The numbers in this document are not projections. They are drawn from the Defugo Biomass to Energy White Paper (January 2024), the Orivium Regenerative Mining Platform documentation, AEMO's Oxford Economics data centre demand forecasts (2025), the Australian Bureau of Statistics, and Alpha Matica's modelling of data centre economics. The 500,000 jobs figure is bottom-up from UPP module counts and ABARES farm employment data. The 62% emissions abatement figure is from documented Australian fuel consumption statistics. The <1% land figure is from Australia's own Bureau of Statistics land mass data.

The Digital Landlord model does not require new technology. It does not require government subsidies. It requires a government that understands the difference between investment flowing through Australia and investment staying in Australia — and is willing to use development preference to favour operators who make that distinction real.

### THE CALL TO ACTION

Run the AI model over these numbers. Present the blended IRR, the land requirements, the job multipliers, the tax comparison and the emissions abatement to the market and to government. Build the first facility as a proof of concept. The window to position Australia as the sovereign, carbon-neutral, circular-economy compute hub for the Asia Pacific is measured in investment cycles, not decades. Australia absolutely hasn't missed it. But it absolutely could.

**Defugo Carbon REIT (Biomass to Energy White Paper, Jan 2024) · The Digital Landlord Data Centre · Orivium Regenerative Mining Platform**

Triple Stack Model for Australian Sovereign Compute Infrastructure | Confidential Draft | April 2026