

The Digest's 2026 Multi-Slide Guide to C&D Wood's Clean Fraction

The US landfills tens of millions of tonnes of construction and demolition wood. The fraction that meets a buyer's spec is far smaller — and someone has to pay to find it.

THE PUZZLE · OBSERVED DATA

29.6 Mt went to landfill, yet no listed US gasification project uses it.

US C&D WOOD LANDFILLED · 2018

29.6 Mt

72.5% of the 40.8 Mt generated (derived) — an EPA modelled estimate

Reported · EPA, 2018 (latest EPA)

US GASIFICATION PROJECTS ON C&D WOOD

None

Listed projects run on woody biomass, MSW or forest residue — not C&D or urban wood

Reported · IEA Bioenergy Task 33, 2023

THE QUESTION · INTERPRETATION

How much of that wood can meet a buyer's spec — and who pays to sort it?

The reactor is rarely the constraint. Each outlet sets a purity threshold, contaminated ash becomes someone's liability, and the cheapest legal outlet takes whatever is left.

WHERE IT COMES FROM AND GOES · OBSERVED DATA

Nine-tenths is demolition wood, and most of it is buried.

Generated by source · 40.8 Mt



■ Construction 3.4 Mt

Disposition · 40.8 Mt



■ Fuel 7.5 Mt ■ Compost/mulch 2.5 Mt ■ Manufactured products 1.2 Mt

Bars to scale (1,400 px = 40.8 Mt). EPA modelled estimate, not scale weights.

Source: EPA, Advancing Sustainable Materials Management: 2018 Fact Sheet (Dec 2020), Tables 6 & 8 · 2018 (latest EPA)
· Reported

DON'T DOUBLE COUNT · OBSERVED DATA

Household wood is a separate pool, and it already has buyers.

C&D WOOD LANDFILLED

29.6 Mt

of 40.8 Mt generated

Reported · EPA, 2018 (latest EPA)

MSW WOOD LANDFILLED

12.2 Mt

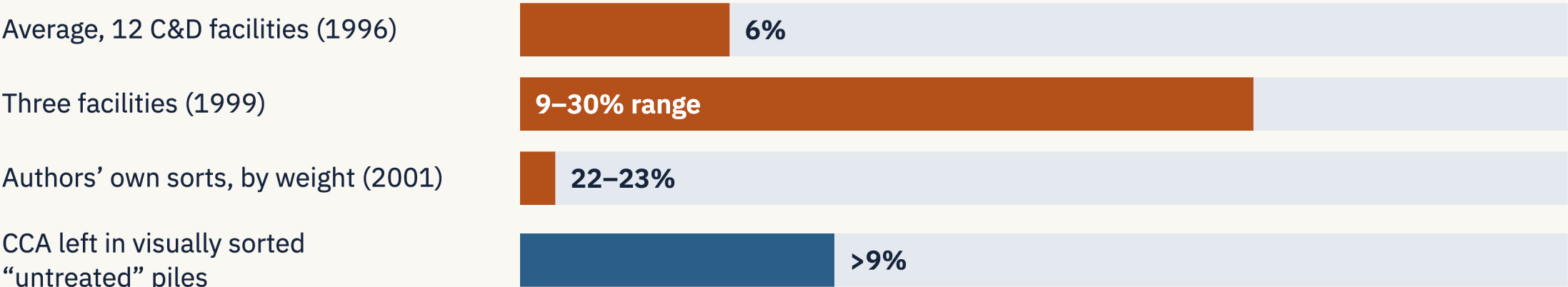
of 18.1 Mt generated; 3.1 Mt recycled
(mulch/bedding), 2.8 Mt combusted

Reported · EPA, 2018 (latest EPA)

Adding the two (~42 Mt landfilled, derived) counts wood that pallet and mulch markets already compete for.

TREATED WOOD IN THE PILE • OBSERVED DATA

Florida sorts found 6% to 30% treated wood in “recycled” C&D wood.



Scale 0–30% (1,100 px). Residential CCA was phased out from 2004, but long service life keeps it arriving; current fractions are unverified.

Source: Solo-Gabriele et al., On-Line Sorting for CCA Wood (Hinkley Center / FDEP), unpublished 2001 draft • field sorts 1996–2001 • Measured

Each outlet sets its own threshold, and the ash carries the risk.

MULCH

<0.2%

CCA; Florida bars CCA wood as mulch or compost (2010 rule)

Academic inference / Regulator-observed

WOOD FUEL

<5%

CCA, needing 95% sort efficiency

Academic inference

BOILER ASH

~5%

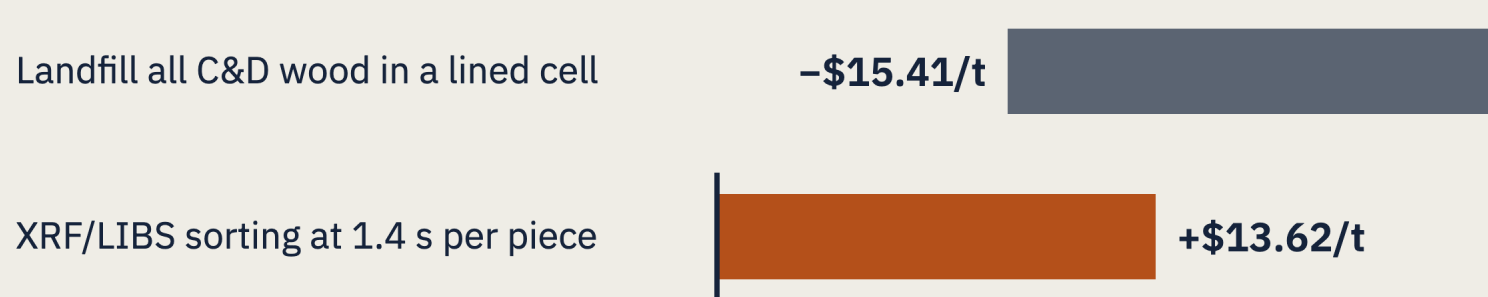
treated wood in the feed may make the ash characteristic hazardous waste

Regulator-observed

Florida DEP: “it is not known how much treated wood can be safely burned.”

SORTING ECONOMICS · HYPOTHESIS (MODELLED)

On paper, sorting beats burying. Nobody has built it at scale.



On-line XRF unit: ~\$30–50k each

Status: a model output, not an outcome

Source: Solo-Gabriele et al., On-Line Sorting for CCA Wood (Hinkley Center / FDEP), unpublished 2001 draft · Academic inference, modelled, never built at scale

THE PRICE OF CLEAN · OBSERVED DATA

Clean, graded wood has a price. Contaminated wood does not.

PICKED, GROUND, WASHED

\$70–80/t

C&D wood sold to mulch or particleboard

Reported · one processor, Sept–Oct 2018

WITH METAL, DIRT OR CONCRETE

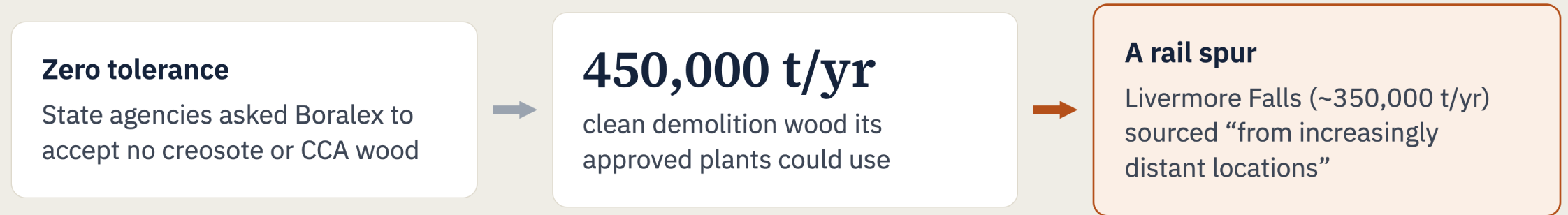
“Valueless”

as wood fuel; NRG’s Buffalo closure “crushed” the fuel price

Reported · one processor, Sept–Oct 2018

In Chicago there was “almost no market” beyond landfill alternative daily cover. Regional prices from a single source, not a price series.

In Maine, a strict spec pushed the clean-wood catchment ever wider.



A purity spec stricter than the material naturally delivers shrinks the clean fraction per site, so the catchment has to grow.

The UK loop works on a graded spec and a subsidised outlet.

UK waste wood processed, 2025 · 4.013 Mt (89% of ~4.5 Mt arisings; down 7.3%)



■ Other outlets ~0.63 Mt (derived remainder) · bar to scale, 1,400 px = 4.013 Mt

Fragile

Biomass outages: stockpiles grew. ROC support expires from 2027.

Industry benchmark · trade association (WRA)

EU, 2022: ~47 Mt wood waste

~40% recycled into particleboard, ~60% energy recovery

Industry benchmark · advocacy (European Panel Federation)

Cardboard is the reverse of demolition wood on every axis.

Axis (mechanism inferred)	Corrugated boxes	C&D demolition wood
Outcome, 2018	96.5% recycled (Reported)	72.5% landfilled (derived)
Where generated	Commercial back docks, already aggregated	Scattered demolition sites
Density	Baled	Bulky
Spec	OCC grade	Mixed, painted, nailed, treated
Buyer	Mills pay a positive price	Outlets reject contaminated wood

“Several billion gallons” does not survive the arithmetic.

SEED CLAIM

Rejected

“Enough for several billion gallons”
of biofuel from landfilled C&D wood

ILLUSTRATIVE CEILING

~1–2 bn gal/yr

~24–25 Mt dry at 100% capture × an
assumed, unsourced 50–80 gal/dry t

Derived, illustrative only

WOODLAND BIOFUELS

Never built

Sarnia: 79.5 M L/yr on forest and
C&D wood “by 2021”; still pilot
in 2020

Announced · NRCan; trade press

Realistic capture is far lower than 100%: the spec, the sorting bill and the cheapest outlet all take their share first.

WHAT MOST READERS MISS · INTERPRETATION

The spec, not the reactor, sets the usable fraction.

And whoever owns the ash decides how much wood reaches a refinery. Where a loop works, someone grades the wood and someone subsidises the outlet.

Competing view: some “landfilled” wood is cover material or fines that cannot be economically separated, so the true opportunity may be smaller still.

DECISION TEST

Six questions before building on C&D wood

1. What share of your catchment is demolition wood?
2. What purity does your outlet require, and who certifies it?
3. Who pays for sorting — the generator, the processor or you?
4. Where does the ash go, and who owns it?
5. What does the cheapest local outlet — landfill, cover, a biomass boiler — pay?
6. Does your model survive the loss of a subsidised outlet?