

ECOS 2024 Fall Meeting

Breakout Option #3: PFAS Destruction, Disposal, & Designation

Wednesday, September 4 at 2:10 - 3:10 p.m. Eastern

Evaluating PFAS Destruction Technologies

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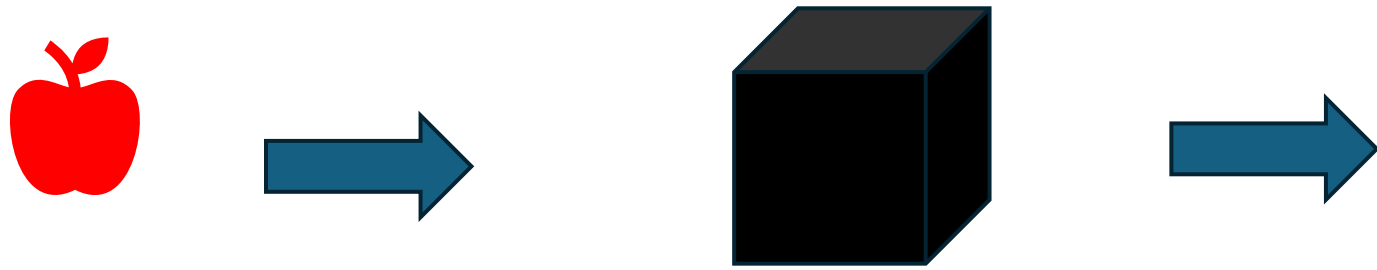


Question 1:

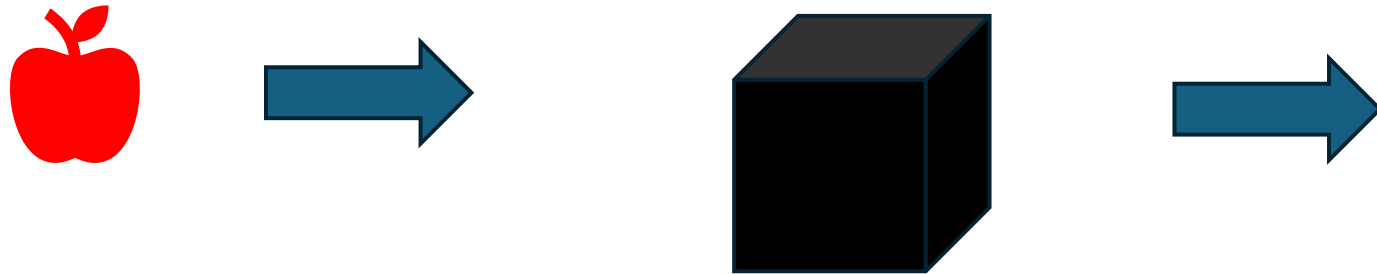
What are the top challenges or considerations you see with regards to PFAS destruction and disposal policy and technology?



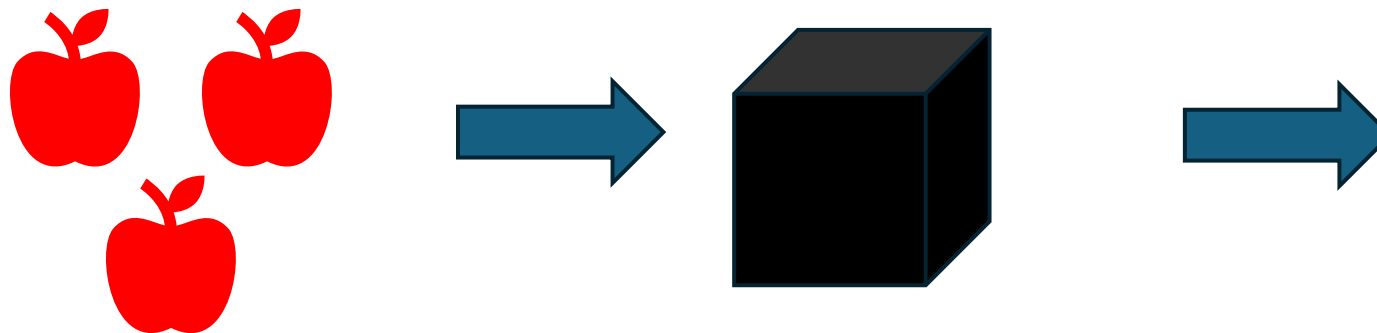
Destructive Technology Evaluation Test Methods



OTM-45 If successful it just shows that you can't see the whole intact apple.
1st step of evaluation



OTM-50 and OTM-55 Can you see any pits or stems?
PIDs (products of incomplete destruction)



DREs Destruction removal efficiencies. To get more nines you need more apples.
99.9999% is 100 times more efficient than 99.99%.



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Role of technology and innovation in PFAS

Question 1:

What are the top challenges or considerations you see with regards to PFAS destruction and disposal policy and technology?


Technology and Innovation- What to consider...



Products

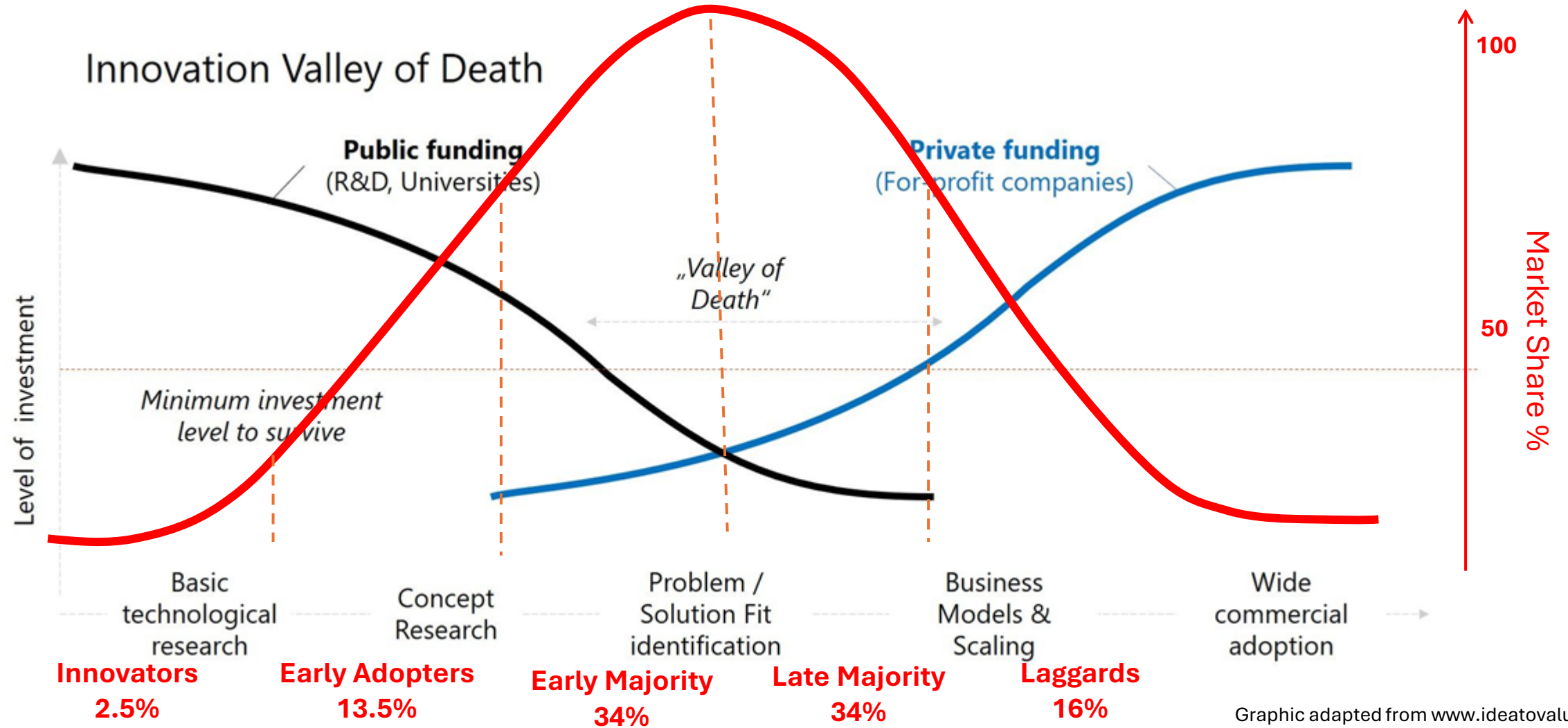


Process



Water/Waste/
Environment

Technology Development



Question 2:

Can each of you walk through these considerations and steps again, but in the context of firefighting foam?



Protecting Liability and Sustainability



Creates a defensible narrative backed by data.
Simplified story to tell about how material is handled.



Infrastructure already exists so we do not need to re-create the wheel.



Focus on using resources we already have and making the best use of them. Ex. Non-solvent based on-site carbon and resin regeneration.



Consider energy and water usage.

Question 2:
Can each of you walk through these considerations and steps again, but in the context of firefighting foam?

Key Considerations- Challenges and Opportunities

**Research and
Development**

**Demonstration
and Validation**

**Commercializati
on**

**Operational
Expansion**

Question 3:

What are your top one or two suggestions for the audience?



Top 5 Evaluation Criteria for PFAS Treatment and Disposal Choices

- Viability - acceptance by regulators, the public, and consideration of environmental justice
- RCRA permitted facility
- Proven Results
- Sustainable and Scalable – energy and water use
- Maximum emission control technologies





Basic Questions to Ask in the Absence of Standardized Evaluation Criteria

- What are the demonstrated removal/destruction efficiencies, demonstrated using OTM-45, OTM-50?
- Do they address compounds beyond PFOA and PFOS and short-chained PFAS compounds?
- Can you identify a potential path for liberation or transformation? Remember that a potential change in structure can make the compound invisible to LC/MS/MS analysis.
- If it is a destructive technology are emission controls in place, example MACT certified (**Maximum Achievable Control Technologies**) **Montreal Protocol**?
- What is the future liability if new discoveries are made?

Question 3:
**What are your top one or two suggestions for
the audience?**

What does the future hold?

- Will the technology development and commercialization pace change?
- How will remedy selection change from current practices? How will that impact costs?
 - Short-term? long—term?
- More Technology Acceleration programs?
 - Defense Innovation Unit (DIU)
 - State Programs/Funding

Figure 7: Detailed Contaminant Groups Addressed in Recent Decision Documents (FY 2018-2020)

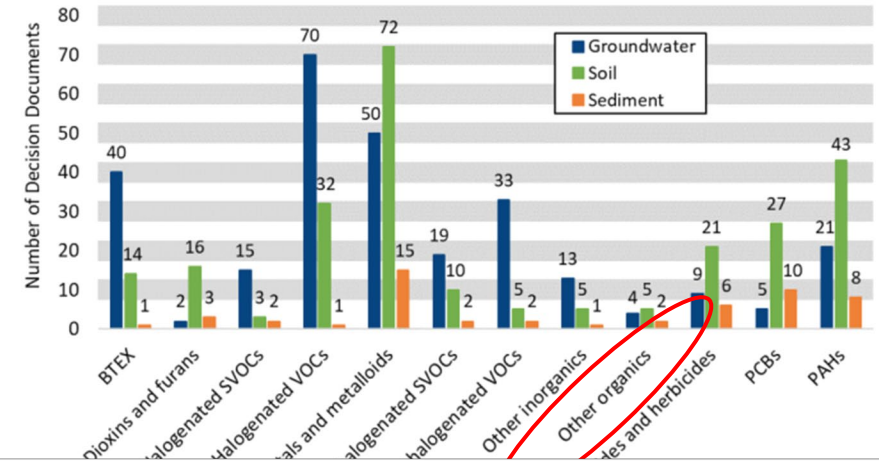


Table 8: Comparison of Remedy Selection Data (FY 2015-2017 and FY 2018-2020)

Selected Remedy		FY 2015 - 2017	FY 2018 - 2020
Source	Treatment	42%	50%
	In Situ Treatment	20%	34%
	Ex Situ Treatment	29%	27%
	Containment/Disposal	67%	67%
	Disposal (off-site)	45%	52%
	Containment (on-site)	46%	39%
Groundwater	Institutional Controls	71%	69%
	Treatment	65%	67%
	In Situ Treatment	51%	47%
	Ex Situ Treatment (P&T)	20%	31%
	MNA	20%	31%
Institutional Controls		71%	75%