NGA GLASS CONFERENCE™

MILWAUKEE

AUGUST 6-8, 2024







How NGA Member Companies Will Benefit from the EPA Grant



Urmilla Sowell
Vice President,
Advocacy & Technical Services



Tom Culp
Codes Consultant,
Birch Point Consulting

EPA GRANTS = 160M

NGA - \$2.1 million

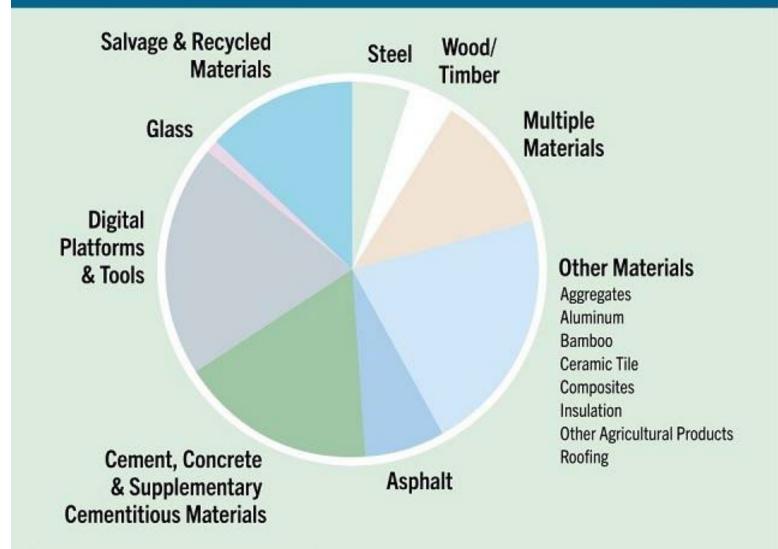
38 grantees selected 14 material types

NGA is the ONLY glass representative

Material & Product Categories for Grant Selections

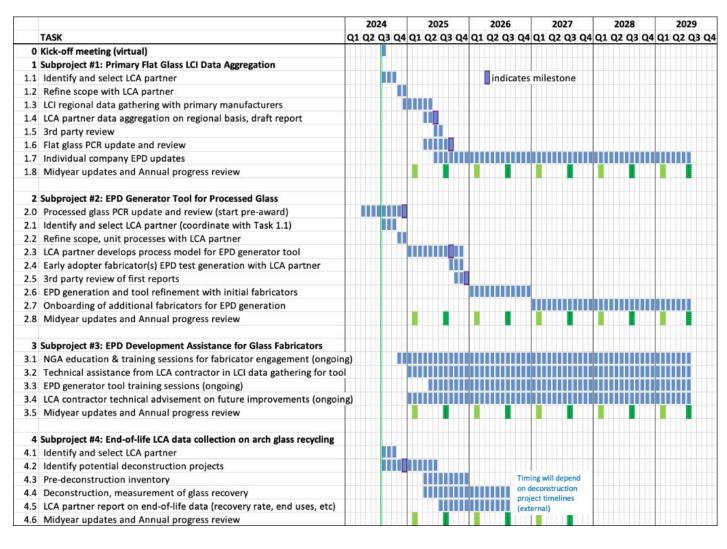
Reducing Embodied Greenhouse Gas Emissions for Construction Materials*





^{*}Selections are contingent upon completion of legal and administrative requirements.





NGA grant application:

- "Architectural Glass EPD
 Development to Reduce Embodied
 Greenhouse Gas Emissions for
 Construction Materials and
 Products"
- **\$2.1M** over 5 years
- Highlights what our industry has already done with primary flat glass EPDs, complexity and diversity of the industry with regards to processed glass products, industry needs and issues.

Architectural Glass EPD Development Grant Proposal

Four subprojects:

1. Primary Flat Glass LCI Data Aggregation (\$333k)

• Provide support to improve granularity of primary flat glass LCI data, as well as PCR update.

2. EPD Generator Tool for Processed Glass (\$379k)

• Develop robust generator tool capable of producing both LCA data reports and full 3rd-party reviewed EPDs for processed glass products in conformance with ISO standards.

3. EPD Development Assistance for Glass Fabricators (\$1.2M)

• Provide technical, educational, and financial assistance to glass fabricator members for EPD development.

4. End-of-life LCA data collection on architectural glass recycling (\$226k)

• To improve the understanding about glass end-of-life and quality of LCA part D data, quantify glass recovery rates and track end-use outcomes for recycled glass on 1-3 deconstruction projects.



Subproject 1. Primary Flat Glass LCI Data Aggregation (\$333k)

• Provide support to improve granularity of primary flat glass LCI data, as well as PCR update.

		20	024			2025		20	26		20	27		20	28			2029	9
TASK	Q	1 Q2	Q3	Q4	Q1	Q2 Q3 Q4	Q1	Q2	Q3 Q4	Q1	Q2	Q3 Q4	Q1	Q2	Q3 (Q4 (Q1 (Q2 C	Q 3 Q4
Kick-off meeting (virtual)																	Ш		
Subproject #1: Primary Flat Glass LCI Data Aggregation			Ш																
Identify and select LCA partner			IJ					ind	dicate	s mil	est	one							
Refine scope with LCA partner			Ш																
LCI regional data gathering with primary manufacturers			Ш	Ш	Ш														
LCA partner data aggregation on regional basis, draft report																			
3rd party review																			
Flat glass PCR update and review			Ш																
Individual company EPD updates			Ш				Ш	Ш	ШШ	Ш	Ш		Ш		Ш		Ш		
Midyear updates and Annual progress review			П																
	Kick-off meeting (virtual) Subproject #1: Primary Flat Glass LCI Data Aggregation Identify and select LCA partner Refine scope with LCA partner LCI regional data gathering with primary manufacturers LCA partner data aggregation on regional basis, draft report 3rd party review Flat glass PCR update and review Individual company EPD updates	Kick-off meeting (virtual) Subproject #1: Primary Flat Glass LCI Data Aggregation Identify and select LCA partner Refine scope with LCA partner LCI regional data gathering with primary manufacturers LCA partner data aggregation on regional basis, draft report 3rd party review Flat glass PCR update and review Individual company EPD updates	TASK Kick-off meeting (virtual) Subproject #1: Primary Flat Glass LCI Data Aggregation Identify and select LCA partner Refine scope with LCA partner LCI regional data gathering with primary manufacturers LCA partner data aggregation on regional basis, draft report 3rd party review Flat glass PCR update and review Individual company EPD updates	TASK Kick-off meeting (virtual) Subproject #1: Primary Flat Glass LCI Data Aggregation Identify and select LCA partner Refine scope with LCA partner LCI regional data gathering with primary manufacturers LCA partner data aggregation on regional basis, draft report 3rd party review Flat glass PCR update and review Individual company EPD updates	Kick-off meeting (virtual) Subproject #1: Primary Flat Glass LCI Data Aggregation Identify and select LCA partner Refine scope with LCA partner LCI regional data gathering with primary manufacturers LCA partner data aggregation on regional basis, draft report 3rd party review Flat glass PCR update and review Individual company EPD updates	TASK Kick-off meeting (virtual) Subproject #1: Primary Flat Glass LCI Data Aggregation Identify and select LCA partner Refine scope with LCA partner LCI regional data gathering with primary manufacturers LCA partner data aggregation on regional basis, draft report 3rd party review Flat glass PCR update and review Individual company EPD updates	TASK Kick-off meeting (virtual) Subproject #1: Primary Flat Glass LCI Data Aggregation Identify and select LCA partner Refine scope with LCA partner LCI regional data gathering with primary manufacturers LCA partner data aggregation on regional basis, draft report 3rd party review Flat glass PCR update and review Individual company EPD updates	TASK Kick-off meeting (virtual) Subproject #1: Primary Flat Glass LCI Data Aggregation Identify and select LCA partner Refine scope with LCA partner LCI regional data gathering with primary manufacturers LCA partner data aggregation on regional basis, draft report 3rd party review Flat glass PCR update and review Individual company EPD updates	TASK Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4 Q1 Q2 Kick-off meeting (virtual) Subproject #1: Primary Flat Glass LCI Data Aggregation Identify and select LCA partner Refine scope with LCA partner LCI regional data gathering with primary manufacturers LCA partner data aggregation on regional basis, draft report 3rd party review Flat glass PCR update and review Individual company EPD updates	TASK Kick-off meeting (virtual) Subproject #1: Primary Flat Glass LCI Data Aggregation Identify and select LCA partner Refine scope with LCA partner LCI regional data gathering with primary manufacturers LCA partner data aggregation on regional basis, draft report 3rd party review Flat glass PCR update and review Individual company EPD updates	TASK Q1 Q2 Q3 Q4 Q1 Q1 Q1 Q1 Q1 Q1 Q1	TASK Q1 Q2 Q3 Q4 Q1 Q2 Q4 Q1 Q2 Q3 Q4 Q1 Q2 Q4 Q1 Q2 Q3 Q4 Q1 Q2	TASK Q1 Q2 Q3 Q4	TASK Q1 Q2 Q3 Q4	TASK Q1 Q2 Q3 Q4	TASK Q1 Q2 Q3 Q4	TASK Q1 Q2 Q3 Q4	TASK Q1 Q2 Q3 Q4 Q1 Q3 Q4 Q1 Q2 Q3 Q4 Q1 Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4 Q1	TASK Q1 Q2 Q3 Q4



Subproject 1. Primary Flat Glass LCI Data Aggregation (\$333k)

Eligible Project Type under Section I.C. and Appendix B of the NOFO:

- A. Robust Data for EPDs
- B. Robust PCR Standard Development, PCR Update
- C. EPD Development and Verification



Subproject 2. EPD Generator Tool for Processed Glass (\$379k)

 Develop robust generator tool capable of producing both LCA data reports and full 3rd-party reviewed EPDs for processed glass products in conformance with ISO standards.

			2024		2025		:	2026		2027		2028		2029
	TASK	Q:	L Q2	Q3 Q4	Q1	Q2 Q3 Q4	Q1 Q	2 Q3 Q4	Q1	Q2 Q3 Q4	Q1	Q2 Q3 Q4	Q1	Q2 Q3 Q4
2	Subproject #2: EPD Generator Tool for Processed Glass													
2.0	Processed glass PCR update and review (start pre-award)		Ш	Π										
2.1	Identify and select LCA partner (coordinate with Task 1.1)			Π										
2.2	Refine scope, unit processes with LCA partner													
2.3	LCA partner develops process model for EPD generator tool				П									
2.4	Early adopter fabricator(s) EPD test generation with LCA partner													
2.5	3rd party review of first reports													
2.6	EPD generation and tool refinement with initial fabricators						Ш							
2.7	Onboarding of additional fabricators for EPD generation								Ш		\prod			
2.8	Midyear updates and Annual progress review													



Subproject 2. EPD Generator Tool for Processed Glass (\$379k)

Eligible Project Type under Section I.C. and Appendix B of the NOFO:

- B. Robust PCR Standard Development, PCR update
- C. Robust Tools & Resources to Support & Incentivize Development and Verification of EPDs



Subproject 3. EPD Development Assistance for Glass Fabricators (\$1.2M)

• Provide technical, educational, and financial assistance to glass fabricator members for EPD development.

			202	24	2025			2026			2027			2028			2029		29
	TASK	Q1	Q2	Q3 Q4	Q1	Q2 (Q3 Q4	Q1	Q2 (Q3 Q4	Q1	Q2	Q3 Q4	Q1	Q2	Q3 Q4	1 Q1	Q2	Q3 Q4
3	Subproject #3: EPD Development Assistance for Glass Fabricators																	Ш	
3.1	NGA education & training sessions for fabricator engagement (ongoin	g)			Ш	Ш	Ш	Ш	Ш	ШШ	Ш	Ш	ШП	Ш	Ш	Ш	Ш	Ш	
3.2	Technical assistance from LCA contractor in LCI data gathering for too	ı			П	Ш	ШП	Ш	Ш	ШШ	Ш	Ш	Ш	Ш	Ш	Ш	Ш	Ш	
3.3	EPD generator tool training sessions (ongoing)						ШШ	Ш	Ш	ШШ	Ш	Ш	ШШ		Ш	Ш	Ш	Ш	
3.4	LCA contractor technical advisement on future improvements (ongoin	g)			П	Ш	ШШ	Ш	Ш	ШШ	Ш	Ш	ШШ	Ш	Ш	Ш		Ш	
3.5	Midyear updates and Annual progress review																		
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Subproject 3. EPD Development Assistance for Glass Fabricators (\$1.2M)

Eligible Project Type under Section I.C. and Appendix B of the NOFO:

D. EPD Development and Verification – Technical assistance and reimbursement for EPD development



Subproject 4. End-of-life LCA data collection on architectural glass recycling (\$226k)

 To improve the understanding about glass end-of-life and quality of LCA part D data, quantify glass recovery rates and track end-use

			2024		2025			2026		2027		2028			2029	
	TASK	Q1	Q2	Q3 Q4	Q1	Q2 Q3	Q4	Q1 Q2	Q3 Q4	Q1 Q	2 Q3 Q4	Q1	Q2 Q3 C	4 Q	1 Q2	Q3 Q4
4	Subproject #4: End-of-life LCA data collection on arch glass recycling															
4.1	Identify and select LCA partner			Ш												
4.2	Identify potential deconstruction projects			Ш	Ш											
4.3	Pre-deconstruction inventory						П			_	depend					
4.4	Deconstruction, measurement of glass recovery						П	ШШ		leconst ect tim	ruction					
4.5	LCA partner report on end-of-life data (recovery rate, end uses, etc)						П	ШШ		ernal)	emies					
4.6	Midyear updates and Annual progress review									l I						



Subproject 4. End-of-life LCA data collection on architectural glass recycling (\$226k)

Eligible Project Type under Section I.C. and Appendix B of the NOFO:

A. Robust Data for EPDs: salvaged material data, recovery rates for recycling



