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Landfill Project Protocol v5.0

Workgroup Meeting 1

November 15th 2018

Agenda



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1. Background
2. Introductions
3. Process Overview
4. Issues flagged for updating
 - Summary
 - Minor updates
 - Major Non-PST issues
 - PST issues
5. Open forum for feedback and suggestions
6. Next steps



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Section 1

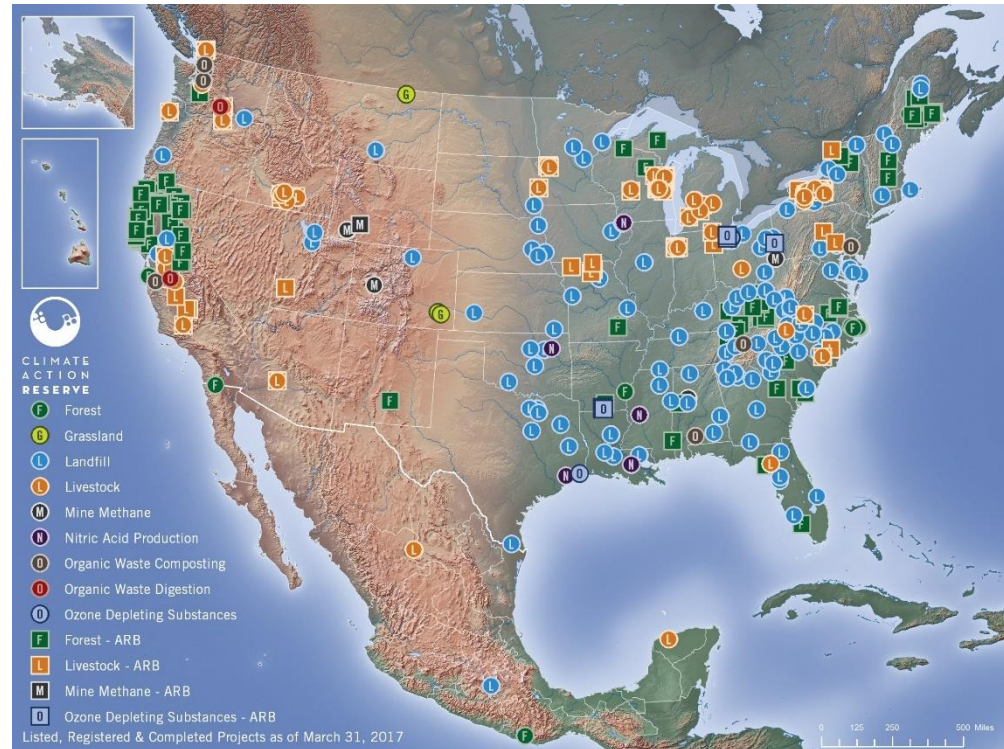
BACKGROUND

Climate Action Reserve



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- Private, nonprofit carbon offset registry, founded in 2001:
 - Develop carbon offset policies and protocols
 - Manage a registry of voluntary offset projects
 - Oversee independent verification program
 - Accredited Offset Project Registry for California Air Resources Board
- 18 different project protocols for U.S. and Mexico
- >120M offset credits issued, both voluntary and compliance (CA)



Landfill protocol development history



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Version	Adoption Date	Notes
V1.0	Nov 29, 2007	Protocol adopted
V2.0	Nov 18, 2008	Improved accuracy and conservativeness in ER calculations and better guidance for MRV
V3.0	Dec 2, 2009	Eligibility for closed landfills with flares, updated definitions and QA/QC guidance
V4.0	June 29, 2011	Introduction of size threshold for LFG-to-energy projects in Performance Standard Test (PST)



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Section 2

INTRODUCTIONS

Reserve Staff



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- Bety Zavariz, *Policy Associate*
 - Protocol development
- Sami Osman, *Senior Policy Manager*
 - Project management and protocol development support
- Heather Raven, *Senior Project Coordinator*
 - Project management and protocol development support

Workgroup Members



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Name (alphabetical)	Organization
Lauren Aepli	US EPA
Jason Clarke	GHD
Nick Facciola	3Degrees Group, Inc
Jason Hoyle	Appalachian State University
Brian KillKelley	NativeEnergy
John McDougal	Element Markets
Rachel Oster	Diversion Strategies
Adam Penque	Centrica Business Solutions
Andrew Sheppard	US EPA
Patrick Sullivan	SCS Engineers
Barbara Tool O'Neil	Independent consultant



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Section 3

PROCESS OVERVIEW

Protocol development timeline



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Milestone/Task	Timeline
Public Scoping Meeting	Oct 2018
Convene Work Group & staff commences update analysis	Oct 2018
1 st WG meeting (webinar)	Nov 15 th 2018
Staff begins drafting – working with WG	Nov 2018
2 nd WG meeting to review draft (webinar)	Late Dec 2018 – early Jan 2019
Staff revises draft, incorporating WG feedback	Jan 2019
Public Comment period	Jan – Feb 2019
Public Comment Meeting (webinar)	Feb 2019
Staff revises draft, incorporating public feedback	Feb – Mar 2019
Final protocol adoption by Reserve Board	Apr 2019

Workgroup expectations



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- Attend and participate in WG meetings to the fullest extent possible
- Provide feedback on specific policy and technical questions
 - At WG meetings, one-on-one with staff, or in sub-committees
- Provide comments on draft protocols and protocol sections
- Be constructive, collaborative, and productive



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Section 4

AREAS FOR IMPROVEMENT

Summary of Proposed Updates – major issues



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Protocol Element	Proposed change
Project definition	Consider defining projects on cell by cell basis, thus allowing for expansion into new cells to be considered new project, with a new crediting period.
Crediting period	Allow for 2 nd CP – with transition period for projects that have not maintained continuous reporting
Performance Standard Test	Reassess the PST for LFG-to-energy projects.
Verification	Consider allowing for multiple reporting periods in a single verification

Summary of Proposed Updates – lessons from E&Cs / other protocols



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Protocol Element	Proposed change
LRT	Updated NSPS / EG NMOC thresholds
PST	Consider allowing new projects at landfills where previous project has shut down
Quant	OX factor guidance, hierarchy options for destruction efficiency values
Monitoring	Metering multiple devices with single meter, monitoring off-site destruction; monitoring for multiple projects at single facility
QA/QC	Removing req for quarterly clean / inspect; temporary stationary meters; extra on-site field check; which instruments subject to portable meter requirements; consider removing requirement to calibrate handheld device to known gas prior to each use; drift for Sage meters
Appendices	Review default factors for available updates

Questions for WG for non-PST changes



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- Are people comfortable with idea of being less prescriptive with QA/QC requirements?
 - Removing requirement:
 - for quarterly clean / inspection – deferring to manufacturer guidance;
 - to calibrate portable CH₄ analyzer to known gas prior to each use.
- Any other specific QA/QC ideas for improvement?
- Any ideas for improving other aspects of the protocol?



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Section 2.2

PROJECT DEFINITION

Project Definition: Expanding existing GCCS = new project



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- OPTIONAL: expansion of existing GCCS into new cell(s) =
 - expansion of existing project OR
 - submitted as a new project – with new crediting period;
- Rationale: cost of expanding is high enough to warrant offset revenue for entire new CP
- Allow projects to share common destruction devices
 - provided monitoring is adequate
 - Extra guidance for regulatory compliance – presumption problem applies equally to all projects at site
- Exploring additionality of expansions – address separately later
- Questions for WG:
 - When should an expansion investment be considered high enough to warrant being considered a new project? A new cell / new destruction equipment?



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Section 3.3

CREDITING PERIOD

2 Crediting Periods



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- Allow for projects to apply for 2nd crediting periods
- Address v4.0 PST size threshold – so v5.0 would not have such barrier to either new projects / projects to transition from older protocol version
 - Address PST options later in meeting
- **Mechanism to address any periods where did not maintain continuous reporting**
- Considering *look-back period*, during which projects that expired under previous version can be submitted under this version for 2nd CP
 - provided project submit 1/more ZCRP(s) for any period in between when completed first CP and commenced 2nd CP;



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Section 7

VERIFICATION

Verification Periods



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- Introduce flexible options for deferring / bundling verifications for given project – borrow from other protocols
- Flexible initial verification period: Can bundle 2 reporting periods together
- Flexible subsequent verification periods
 - Option 1: 12 month verification with site visit
 - Option 2: 12 month verification with desktop verification
 - Can be issued CRTs after desktop verification provided can demonstrate:
 - Site visit every 2nd verification period
 - No significant changes from interim verification
 - Option 3: 24 month verification period
 - Submit monitoring report in interim period
 - Receive CRTs after site visit verification of 24 month period
- **Would WG like to see other options? Other mechanisms?**



Section 3.4.1

PERFORMANCE STANDARD TEST (PST)

PST – Overview / recap



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- Overview
 - What is a PST?
 - What is the v4.0 PST?
 - What were market conditions at time of v4.0 PST?
 - Why are we assessing new v5.0 PST?
 - Current market conditions
 - LFGE penetration rates
 - Rates of installation of new LFGE projects
 - Trends re project expansions
 - PST options
 - LOTS OF QUESTIONS!!

Landfill Project Protocol v4.0

Market conditions



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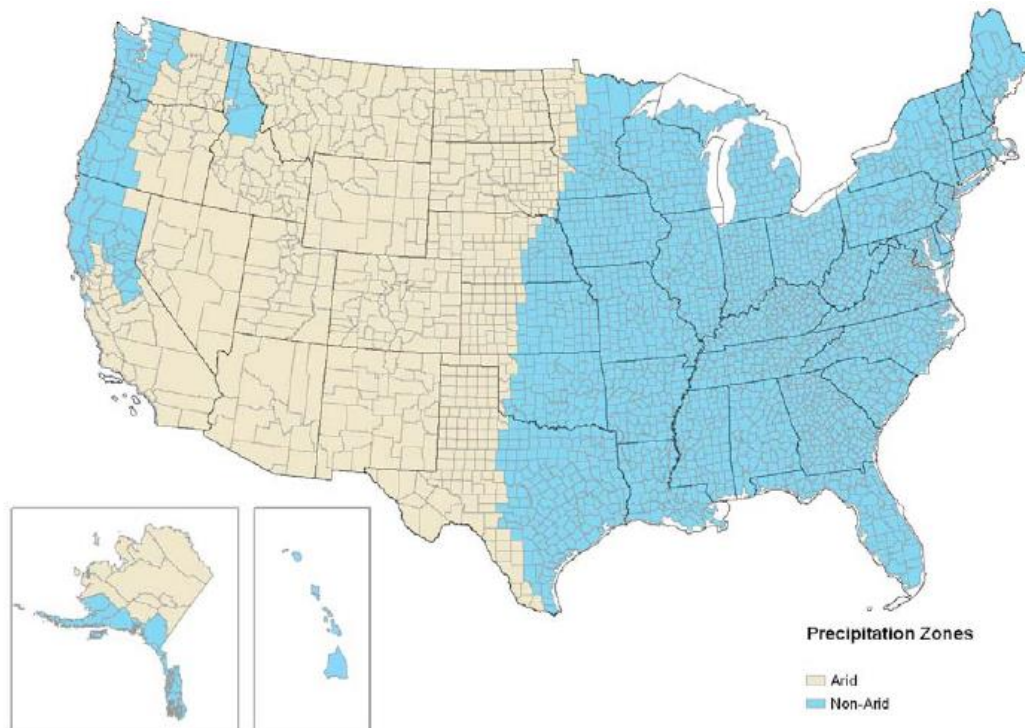
- There was a high penetration rate for LFGE projects that indicated non-additionality

Non-NSPS/EG landfills	Number of landfills	Percent
LFGE projects	251	16.66
No LFG collection	1256	83.34
Total	1507	100
Estimated market penetration of LFGE projects at unregulated landfills		16.66%

Landfill Project Protocol v4.0

Performance Standard Test

- 2 criteria: Waste in Place and Precipitation levels



WIP limits

Arid zones: 2.17 MMT

Non-arid zones: 0.72 MMT

Figure A.1. Precipitation Zones of the United States, by County

Why reassess the PST?



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- Evaluate whether the v 4.0 PST is appropriate based on current market conditions
- Exclude projects developing LFGE as BAU
- Assess whether LFGE expansions can be considered stand-alone projects

Current market conditions

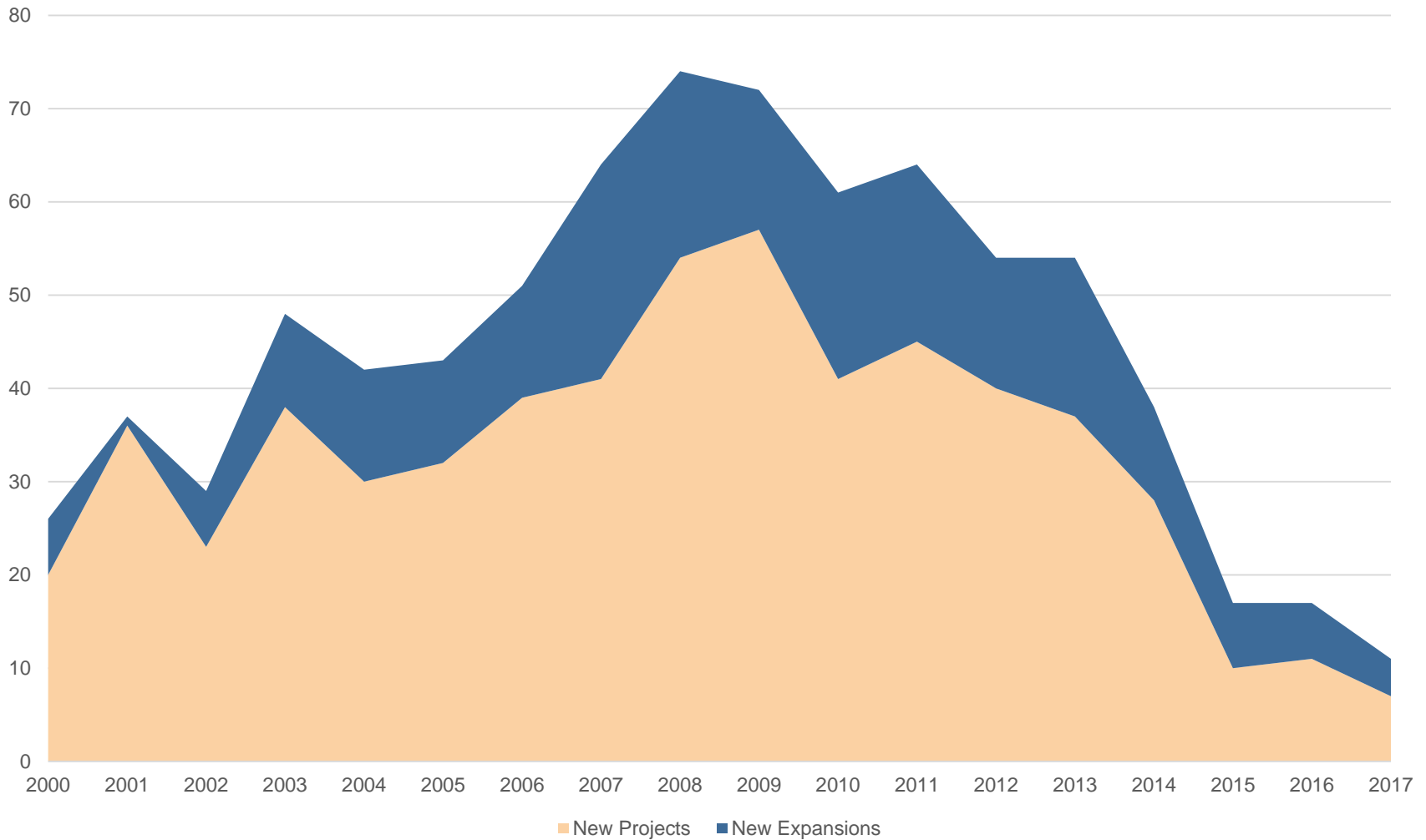
- Preliminary analysis still indicate high market penetration rates (at or above 17%)
- Current LFGE and landfill data based on LMOP:

Criteria	Number of landfills
Total landfill population (LMOP)	2,525
Flaring only projects	750 (30%)
Operational LFGE projects	443 (17%)
LFGE Projects that have shut down	290 (11%)
Landfills with active expansions	91

New LFGE projects over time



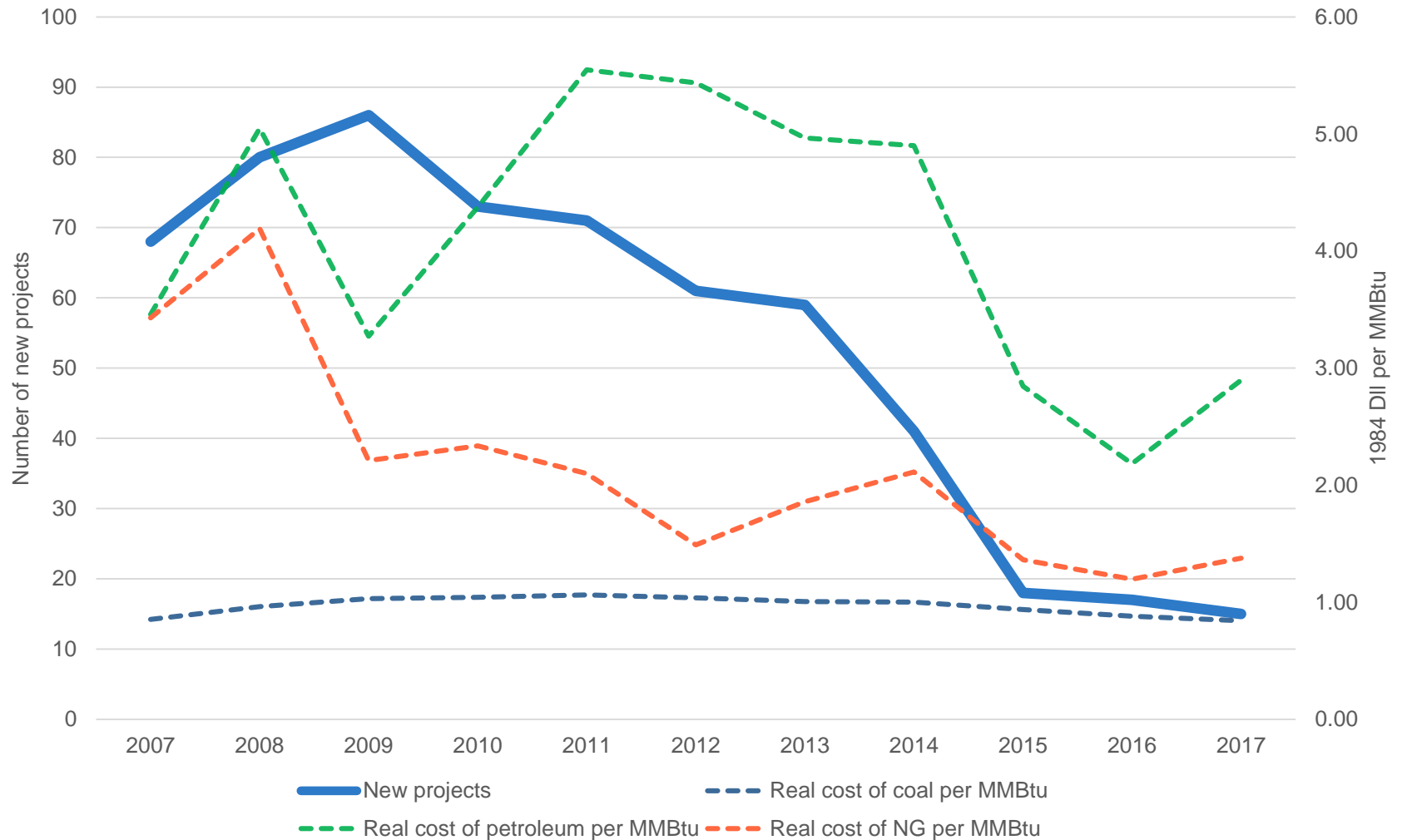
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Market conditions and new LFGE project installations



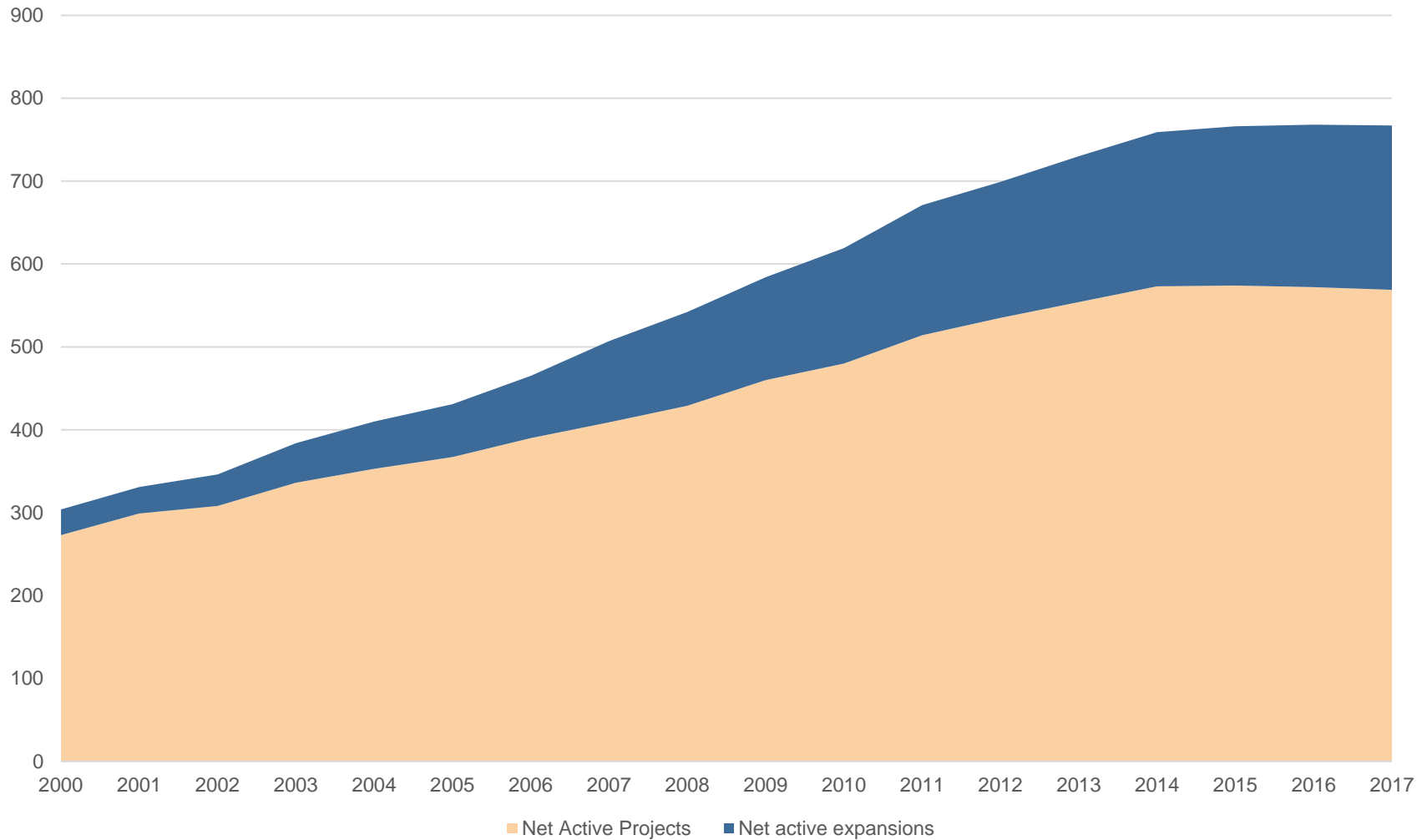
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Net active projects over time



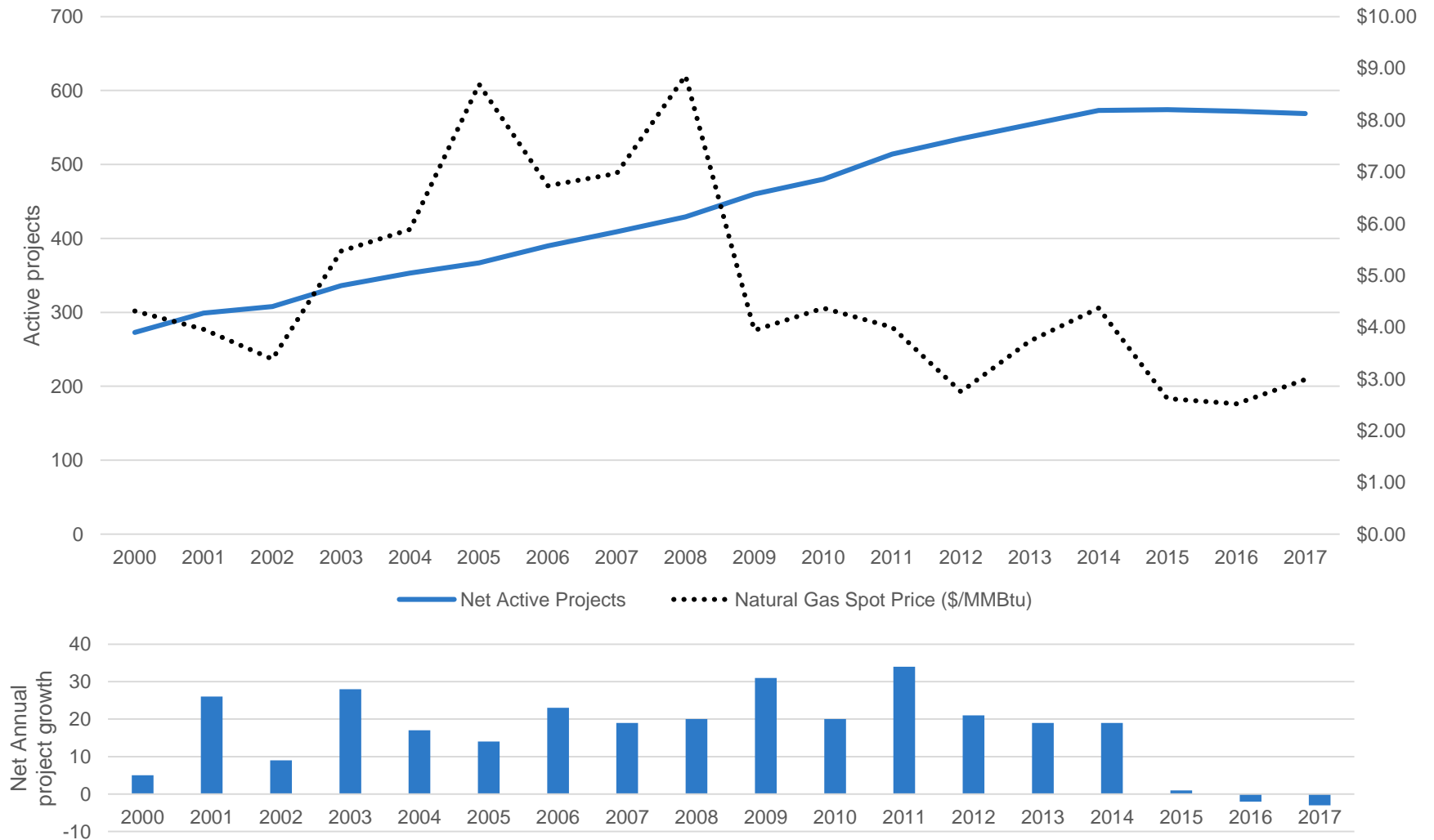
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LFGE projects over time



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PST options



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- Removing size threshold – introduce state-by-state screens
- Removing size threshold – deem all new projects additional
- Removing size threshold – deem all new projects additional – unless / until NG price increase warrants PST restrictions
- Allowing expansions as new projects

PST - Questions for WG



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- How much does the WG believe that the existing PST discourages the installation of new LFGE systems at landfills with no gas collection?
- Do you concur with our short assessment on NG prices having a strong correlation to new LFGE project uptake?
- Have we reached saturation of LFGE projects, and is this contributing significantly to drop off in new LFGE project uptake?
- Regarding unregulated landfills with no GCCS in place, why are they not pursuing LFG destruction (especially those identified as good opportunities by LMOP)? Insufficient carbon incentives? Insufficient NG prices? Or are there other barriers, such as gas production? Have all the gassy landfills been tapped?
- Are existing LFGE projects subject to the same market pressures as new LFGE projects – i.e., when offtake agreements come to an end, do projects struggle to compete with low NG prices?
- Is it reasonable to assume NG prices affect expansions, existing LFGE projects and/or new LFGE projects in same manner?
- Does the WG have alternative ideas on how to assess additionality of existing LFGE projects, expansions and/or new LFGE projects?



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Section 5

FEEDBACK AND SUGGESTIONS



Section 6

NEXT STEPS

Next Steps



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- Submit comments/feedback by November 30th
- Provide WG with draft protocol – late Dec 2018
- 2nd WG Meeting – Late Dec 2018 – early Jan 2019
- Public Comment period – Jan – Feb 2019

Contact Information



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