

ISO/TC255 WG3 HOUSEHOLD BIOGAS SYSTEM

Journey from Idea to Publication

- Household Biogas Systems Recap
- Standard Recap
- How and Why it all began?
- Overview of ISO process
- Difficulties in the process
- Standard Adoption Status

- This standard for Household Biogas Systems covers the small sized production and output of biogas for personal use in homes, kitchens, small farms, etc.
- The standard is applicable to all types and styles of Household Biogas Systems, and it does not address any particular manufacturer of household biogas systems.

2.5

BILLION PEOPLE

WORLDWIDE DO NOT HAVE ACCESS
TO BASIC SANITATION



REFERENCE: UNICEF

3 BILLION PEOPLE

IN THE WORLD USE WOOD
AND CHARCOAL FOR COOKING



REFERENCE: WORLD HEALTH ORGANIZATION (WHO)

SMOKE

1 HOUR
COOKING



400
CIGARETTES



4.3 MILLION PEOPLE

DIE EVERY YEAR FROM EXPOSURE
TO INDOOR AIR POLLUTION



REFERENCE: WORLD HEALTH ORGANIZATION (WHO)

IN SUB-SAHARAN AFRICA,

TREES ARE CUT DOWN

FOR FUEL AT 2X THE RATE OF
THEIR GROWTH



REFERENCE: WORLD HEALTH ORGANIZATION (WHO)

1.3
BILLION
TONNES

OF FOOD WASTED EVERY YEAR



REFERENCE: FOOD AND AGRICULTURE ORGANIZATION (FAO)

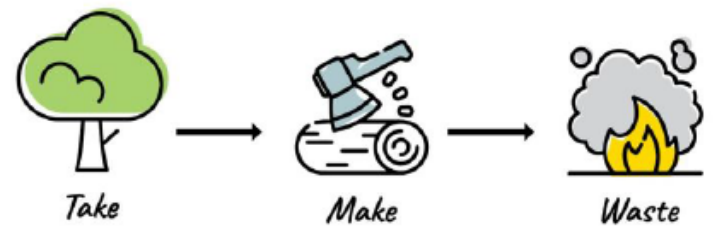
HOUSEHOLD BIOGAS SYSTEM – HOW IT WORKS ?

A Household Biogas System operates as a continuous-flow system, i.e. organic waste is fed in one end, and the gas and fertilizer are emitted from the other. The generated biogas is filtered to remove any unpleasant odors and toxic gases.



FROM LINEAR TO **CIRCULAR ECONOMY**

Linear Economy



Energy from finite sources

Circular Economy



Energy from renewable sources

SYSTEMS TYPES



Kenya



Israel / USA

SYSTEMS TYPES



Nepal



India

SYSTEMS TYPES



Rwanda



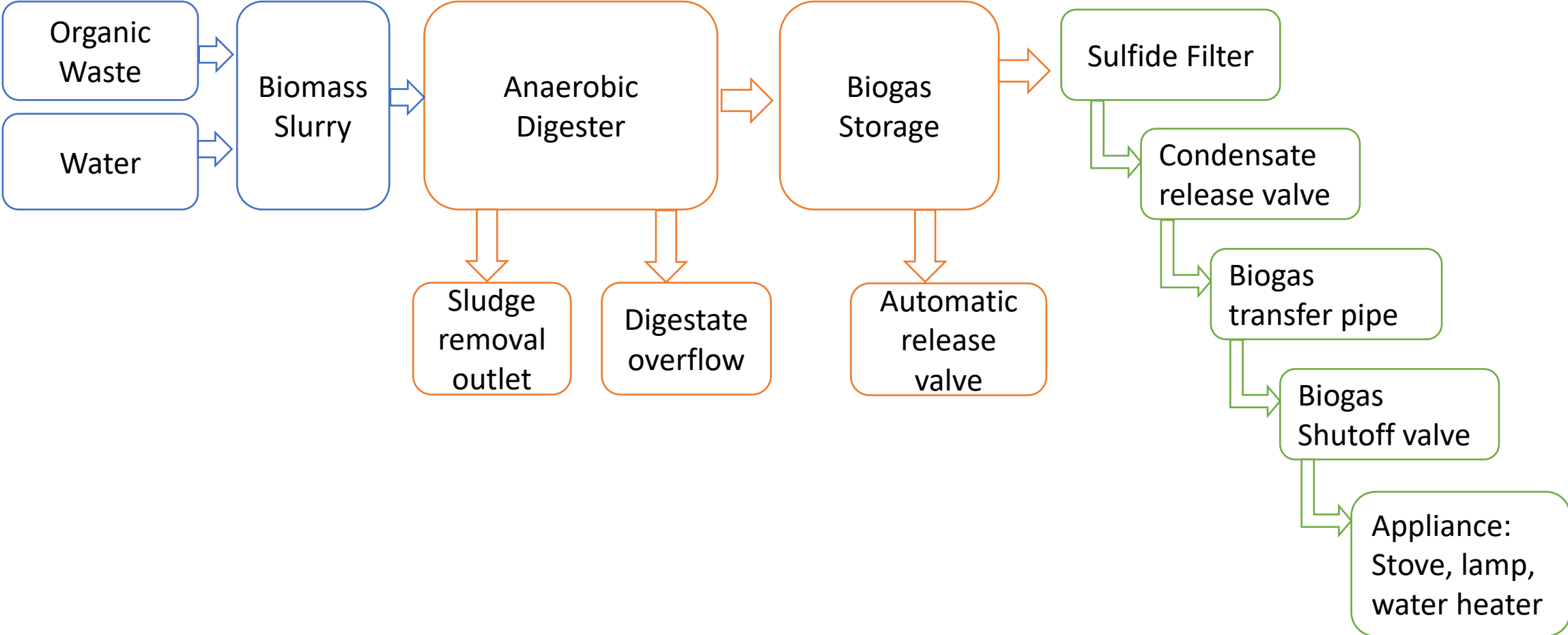
Mexico

HOUSEHOLD BIOGAS SYSTEM - SCOPE

- This standard covers the requirements for the design, installation, operation, maintenance and the safety of Household Biogas Systems (HBSs), producing biogas in an amount equivalent to an installation capacity of less than 100 MWh per year.
- The standard applies to HBSs comprising of pipeline and equipment with pressure levels of less than 5 kPa.
- Any equipment or appliances connected to an HBS or utilizing the biogas energy of an HBS are not a part of the scope of this standard.

PROCESS DESCRIPTION

Schematic of Household Biogas Systems



HOUSEHOLD BIOGAS SYSTEM – STANDARD CONTENT

1. Scope
2. Normative References
3. Terms and Definitions
4. Abbreviated Terms
5. System Design
6. Components Testing and Sampling Criteria
7. System Manuals
8. Prerequisites for Installation
9. Household Biogas System Operation
10. Maintenance & Troubleshooting
11. Markings
12. Safety
13. Warranty and Guarantee

HOUSEHOLD BIOGAS SYSTEM – THE BEGINNING

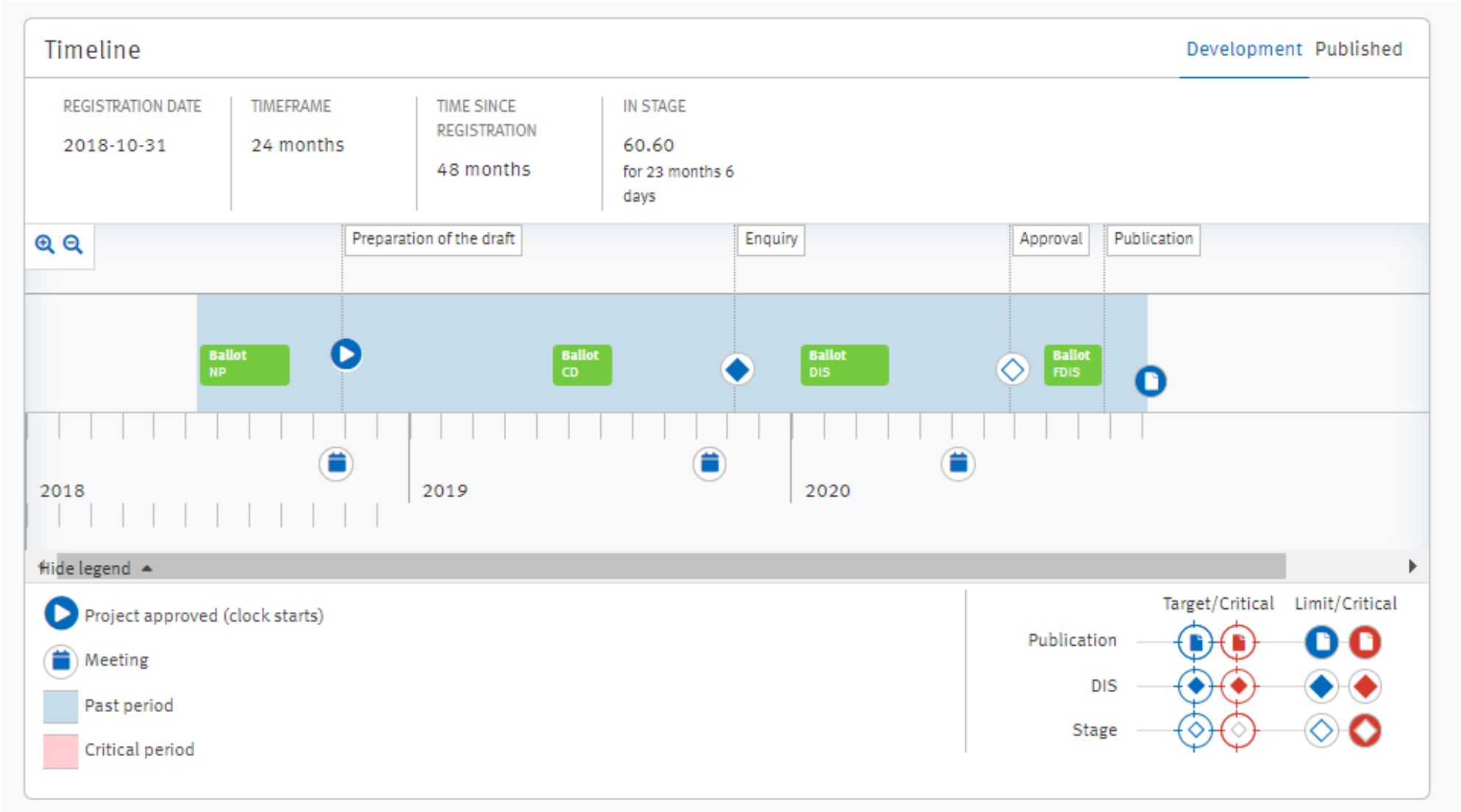
- 2012 - HomeBiogas looking for standard in Israel and offered to join TCC255
- 2013-2016 – Definitions standard of committee – doing order in the field of biogas
- 2016 – WG3 Established for Household Biogas systems by Oshik Efrati, HomeBiogas CEO
- First WG 3 Meeting in Israel- October 2017
- NWIP for vote – June 2018, NWIP approved- September 2018

HOUSEHOLD BIOGAS SYSTEM – PROCESS OVERVIEW

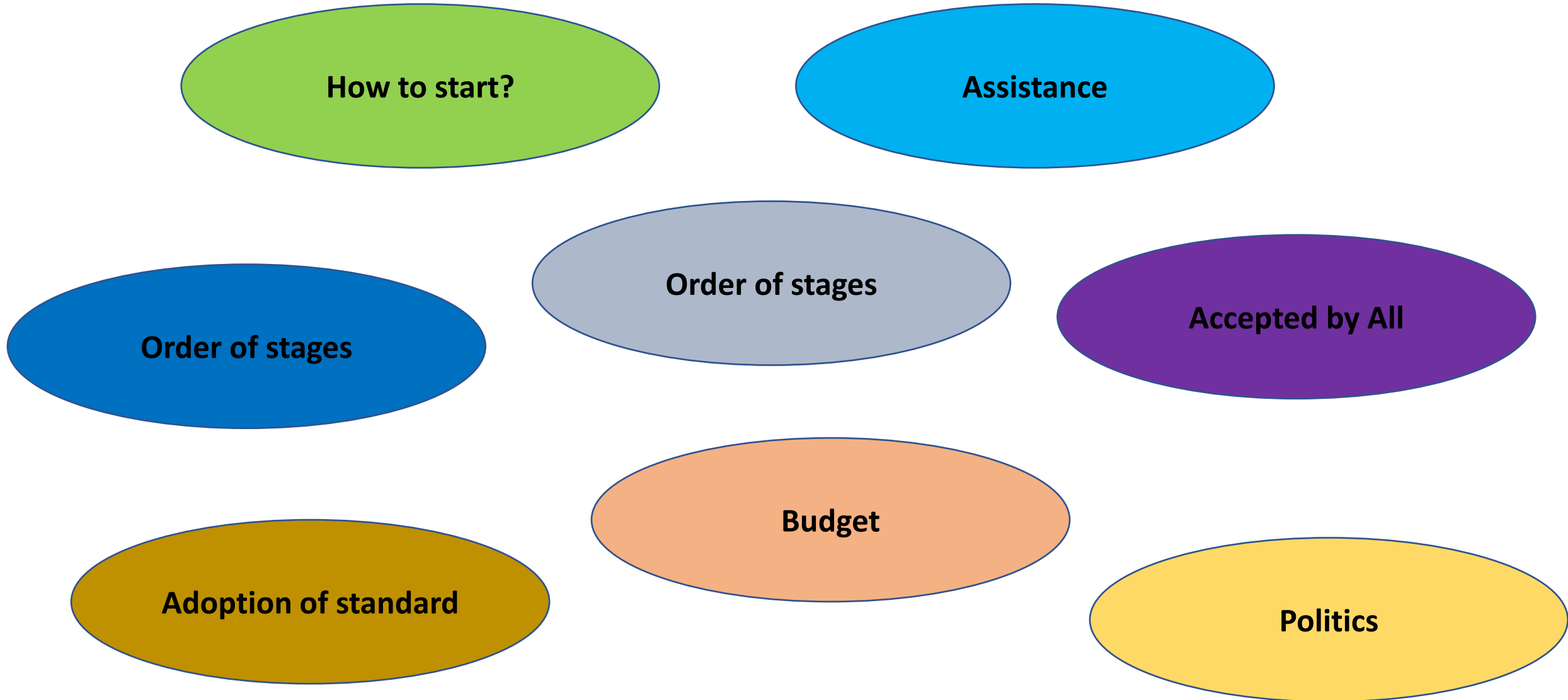
- Second WG 3 Meeting in Paris - October 2018
- CD for vote – May 2019 , CD Approved – July 2019 (9 Approved, 1 Disapproved)
- Third WG 3 Meeting in Toronto - October 2019
 - DIS version approved by after comments review
 - Resolution to proceed with DIS
- DIS for vote – January 2020, DIS Approved – Apr 2020 (14 Approved, 0 Disapproved)
- Forth WG3 meeting by zoom – approved comments on DIS for FDIS submission
- FDIS approved – October 2020
- IS Approved – December 2020

Stage	Version	Description	Edit draft	Target date	Limit date	Started	Status
10.00	1	Proposal for new project registered				2018-06-15	Closed
10.20	1	New project ballot initiated		2018-06-18		2018-06-18	Closed
10.60	1	Close of voting		2018-09-10		2018-09-12	Closed
10.99	1	New project approved				2018-10-31	Closed
20.00	1	New project registered in TC/SC work programme				2018-10-31	Closed
30.00	1	Committee draft (CD) registered				2019-05-21	Closed
30.20	1	CD study/ballot initiated				2019-05-21	Closed
30.60	1	Close of voting/comment period				2019-07-18	Closed
30.99	1	CD approved for registration as DIS				2019-07-24	Closed
40.00	1	DIS registered		2019-09-16	2019-10-31	2019-11-11	Closed
40.20	1	DIS ballot initiated		2020-01-13		2020-01-13	Closed
40.60	1	Close of voting		2020-04-06		2020-04-07	Closed
40.99	1	Full report circulated: DIS approved for registration as FDIS				2020-05-07	Closed
50.00	1	Final text received or FDIS registered for formal approval		2020-08-10		2020-07-31	Closed
50.20	1	Proof sent to Secretariat or FDIS ballot initiated: 2 months		2020-09-02		2020-09-02	Closed
50.60	1	Close of voting -- Proof returned by Secretariat		2020-10-28		2020-10-29	Closed
60.00	1	International Standard under publication				2020-10-29	Closed
60.60	1	International Standard published		2020-12-10	2020-10-31	2020-12-10	Current
90.20	1	International Standard under periodical review		2025-10-15			Awaiting
90.60	1	Close of review		2026-03-04			Awaiting
90.92	1	International Standard to be revised					Awaiting
90.93	1	International Standard confirmed					Awaiting
90.99	1	Withdrawal of International Standard proposed by TC or SC					Awaiting
95.99	1	Withdrawal of International Standard					Awaiting

HOUSEHOLD BIOGAS SYSTEM – PROGRESS OVER TIME



HOUSEHOLD BIOGAS SYSTEM – DIFFICULTIES



HOUSEHOLD BIOGAS SYSTEM – STANDARD ADOPTIONS

← ICS ← 27 ← 27.190

ISO 23590:2020

Household biogas system requirements: design, installation, operation, maintenance and safety

Abstract

Preview

This document covers the requirements for the design, installation, operation, maintenance and the safety of Household Biogas Systems (HBSs), producing biogas in an amount equivalent to an installation capacity of less than 100 MWh per year.

The document applies to HBSs comprising of pipeline and equipment with pressure levels of less than 5 kPa.

Buy this standard

Format Language

✓ PDF + ePub English

Paper English

5/6/2021

Robustness	Gas compartment should be airtight preventing unintentional gas leaks. The material of the entire unit should be of high-quality offering protection against harsh weather and destruction from rodents such as termites
Conformity	ISO 23590:2020
Serviceability	Low maintenance requirements with limited moving parts

4.2 Monitoring and Reporting

Since this is a pilot project, performance data of the units as well as beneficiary satisfaction is key in determining potential scale up of the biogas. A monitoring plan should be devised to collect data on performance of the units in terms of biogas and digestate generated. It is equally important to obtain beneficiary perception on the use of the biogas units. A project report shall be provided with details on the installation process.

Annex A Final ToR Dzaleka ...p Biogas Units Malawi.pdf 1 of 7



CEN

EN ISO 23590:2021 (MAIN)

Household biogas system requirements: design, instal

◀ BACK # 27.190 2014/53/EU CEN/TC 408

ABSTRACT GERMAN FRENCH SLO