

# ASIA CLEAN ENERGY FORUM 2018

HARNESSING INNOVATION TO POWER THE FUTURE

Manila, Philippines • 4-8 June 2018



## INCREASING ENERGY ACCESS

### Innovative Solutions for Clean Cooking and Heating

*“It’s simply good value for money”*



Carlo Figà Talamanca  
CEO






  
**ផ្សងអនាម័យ**

SGFE produces **char-briquettes**  
from **recycled biomass waste**.



*We don't try to sell what we can produce... we try to produce what we can sell!*

# THE 3 “LAWS” OF CHAR-BRIQUETTES

- 
1. **Quality:** the char-briquette must be **comparable or of better quality than traditional charcoal**
  2. **Production process:** the design, set-up and operation of a production process should ensure **consistent quality of the final product** and enable **production at competitive costs**
  3. **Distribution and sales:** the setup of an **efficient and reliable distribution system** is a critical component for sales





# 1. QUALITY



**Chemical and physical properties depend from:**

- raw materials
- charring technology
- binder
- mixing process
- particle size
- compression technology
- drying process
- etc.

# EXAMPLE: quality related to raw materials and charring technologies

No.	Sample	MC [%]	VM [%]	AC [%]	FC [%]
1	SGFE charcoal (Coconut shell)	1.96	6.52	2.40	91.08
2	Gasifier charcoal (wood)	13.91	6.80	5.97	87.23
3	Coconut shell charcoal	5.31	22.44	2.30	75.26
4	Traditional charcoal (wood)	5.77	31.37	4.29	64.34

MC: Moisture Content

VM: Volatile Matter

AC: Ash Content

FC: Fixed Carbon

# EXAMPLE: SGFE's char-briquettes compared to other “commercial” char-briquettes

## 5.1 Fuel test results

Table 1: Physical properties and heating value / calorific value of the fuels

Fuel Id	%Moisture content	%Volatile matter	% Analytical ash	%Fixed carbon	Heating Value (KJ/KJ)
[REDACTED]	8.6	19.6	32.8	39.0	19423
[REDACTED]	7.6	20.8	31.8	39.8	19479
[REDACTED]	7.3	20.9	22.4	48.7	18709
[REDACTED]	7.7	19.8	23.4	49.1	25105
[REDACTED]	7.0	18.2	34.4	40.4	20714
[REDACTED]	7.8	21.0	25.1	46.1	24007
[REDACTED]	8.5	21.7	19.4	50.3	23980
SGFE	11.5	12.5	3.2	74.1	28757
Traditional charcoal	7.8	20.7	5.7	65.7	29405
[REDACTED]	8.0	20.9	22.4	48.7	19845



## 2. SGFE's FACTORY AND PRODUCTION PROCESS



**WELCOME  
TO THE  
FUTURE**



TX

Layout3D\_v3.spp - Tecnomatix Plant Simulation 14 - [.Models.Frame1]

SIEMENS

File

Home

Debugger

Window

Edit

View

Video

Find a Command

Left

Right

Front

Back

Attach

Detach

Add

Animate

External Graphic Groups

Point Clouds

Hide Object

Unhide Objects

TX

Layout3D\_v3.spp - Tecnomatix Plant Simulation 14 - [.Models.Frame1]

SIEMENS

File

Home

Debugger

Window

Edit

View

Video

Find a Command

Open

Event Controller

MUs

Icons

Open Location

Open Origin

Open Class

Open 2D/3D

Paste

Cut

Copy

Delete

Select All

Rename

Delete MUs

Icons

Display Panel

3D Properties

Controls

Observers

User-defined

Attributes Methods

Statistics Report

Structure Inheritance

Context Help

Manage Class Library

Animation

Navigate

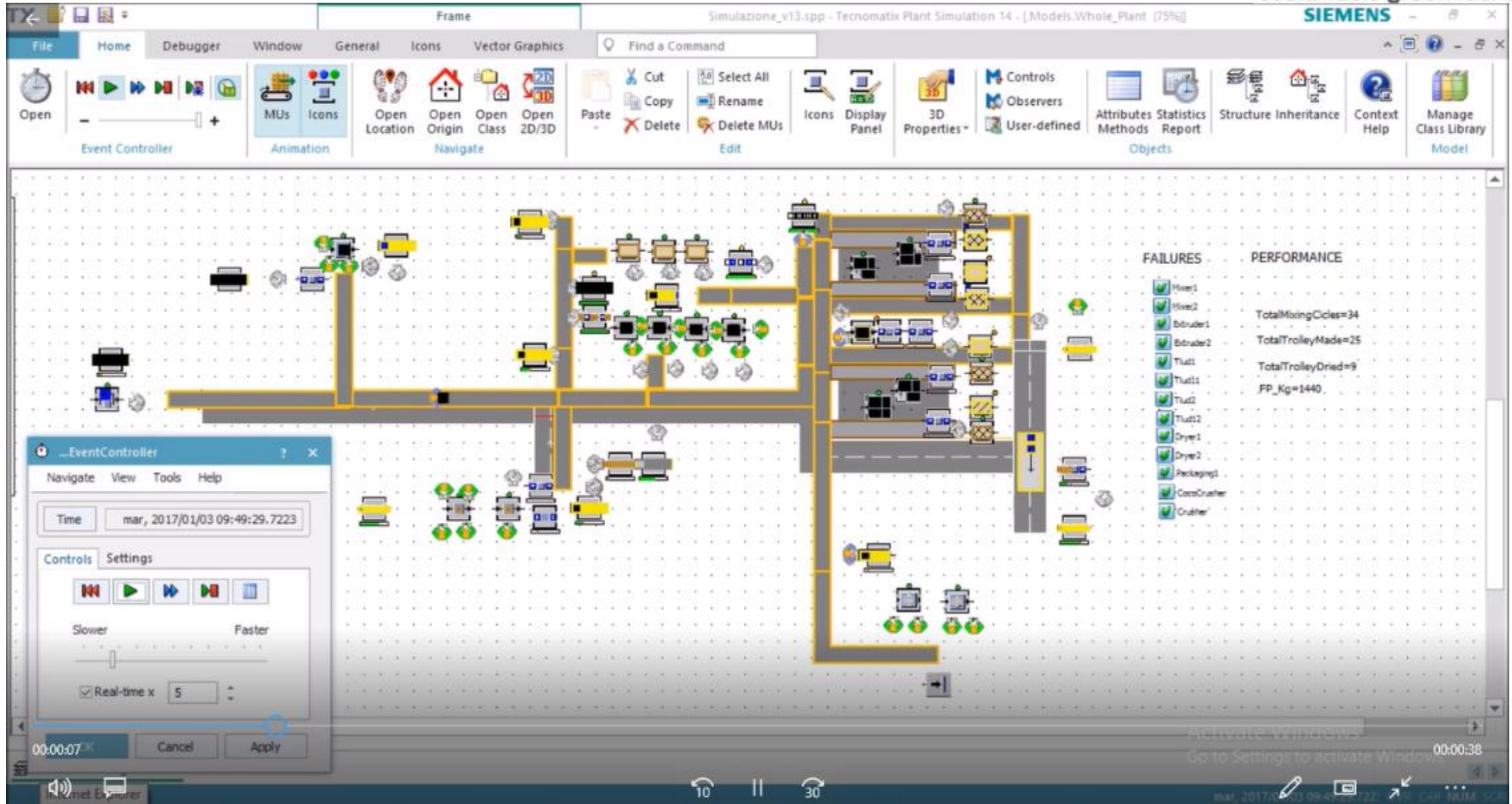
Edit

Objects

Model



# SIMULATION VIDEO (45 sec.)



The screenshot displays the Siemens Tecnomatix Plant Simulation 14 interface. The main workspace shows a 3D simulation of a factory floor layout with various machines and material flow paths. The interface includes a menu bar (File, Home, Debugger, Window, General, Icons, Vector Graphics), a toolbar with icons for opening files, event controller, animation, navigation, and editing, and a right-hand panel with sections for Failures and Performance.

**EventController** window details:

- Time: mar, 2017/01/03 09:49:29.7223
- Controls: Slower, Faster, Real-time x 5

**FAILURES** list:

- Mixer1
- Mixer2
- Blender1
- Blender2
- Tlud1
- Tlud11
- Tlud2
- Tlud12
- Dryer1
- Dryer2
- Packaging1
- CocoCrusher
- Crusher

**PERFORMANCE** data:

- TotalMixingCicles=34
- TotalTrolleyMade=25
- TotalTrolleyDried=9
- FP\_Kg=1440

At the bottom, there is a video player interface with a progress bar showing 00:00:07 and a timestamp of 00:00:38.

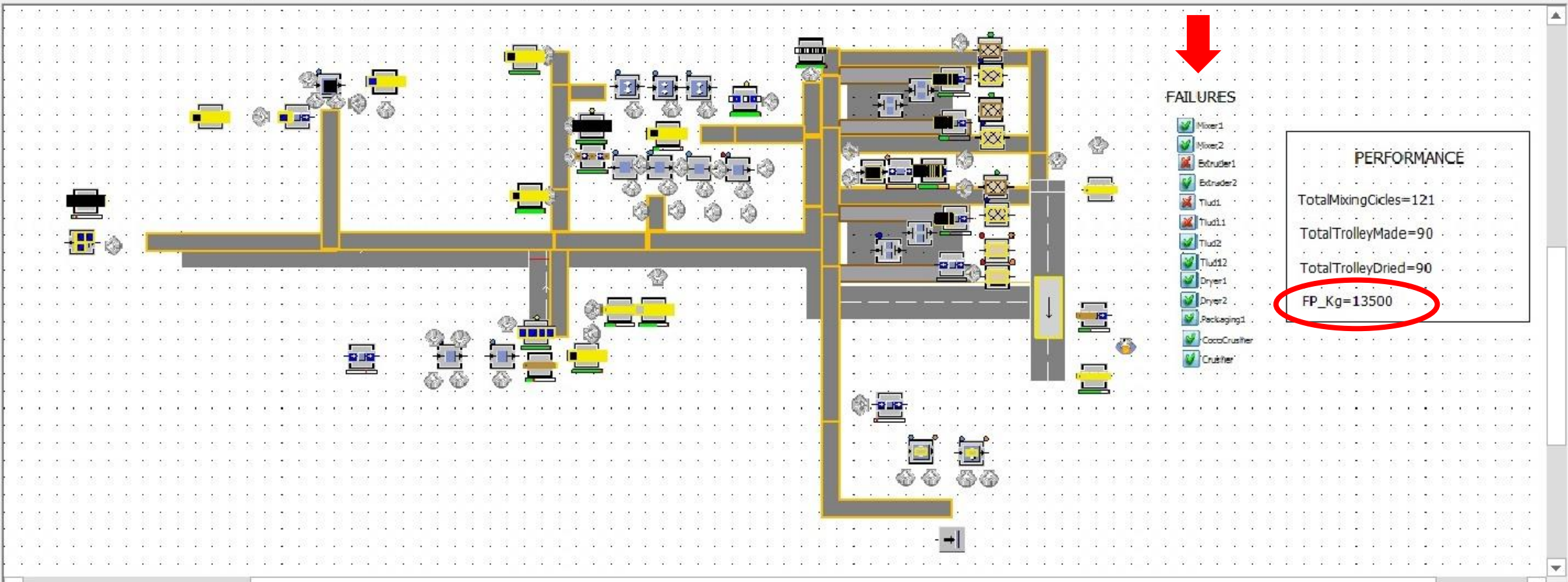


# EXAMPLE: simulation of production with broken machines

TX [Icons] Frame Simulazione\_v13.spp - Tecnomatix Plant Simulation 14 - [Models.Whole\_Plant (75%)]

File Home Debugger Window General Icons Vector Graphics Find a Command

Open Event Controller MU's Icons Open Location Open Origin Open Class Open 2D/3D Paste Copy Delete Select All Rename Delete MU's Edit Icons Display Panel 3D Properties Controls Observers User-defined Attributes Statistics Methods Report Structure Inheritance Context Help Manage Class Library Model



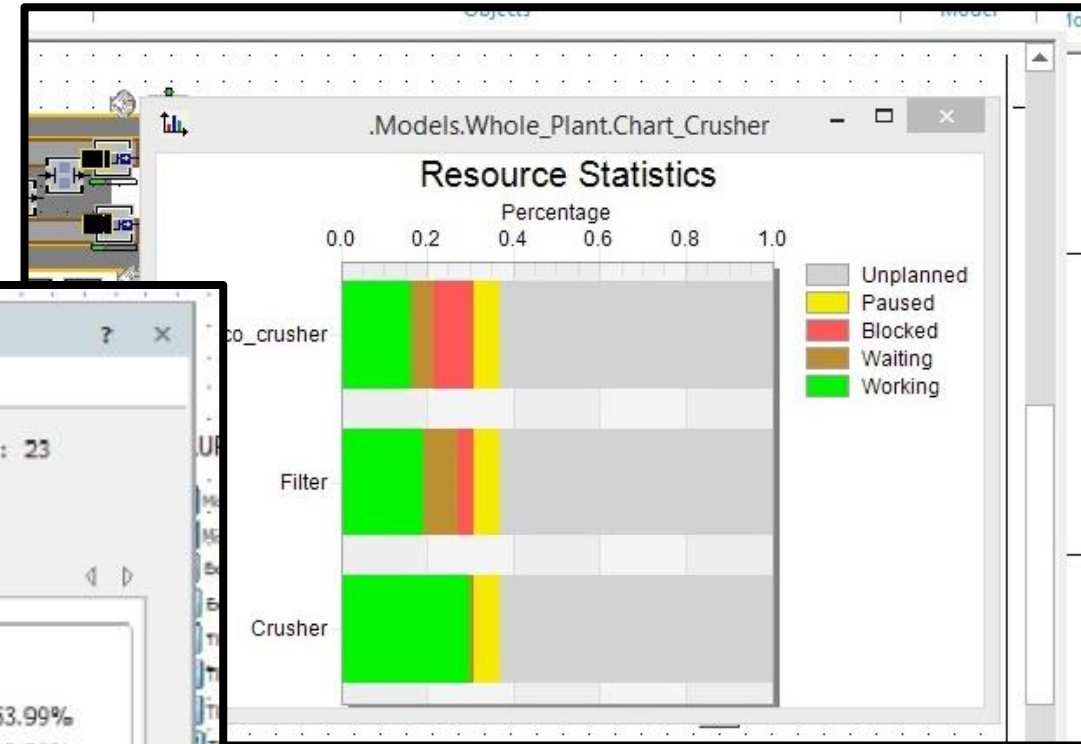
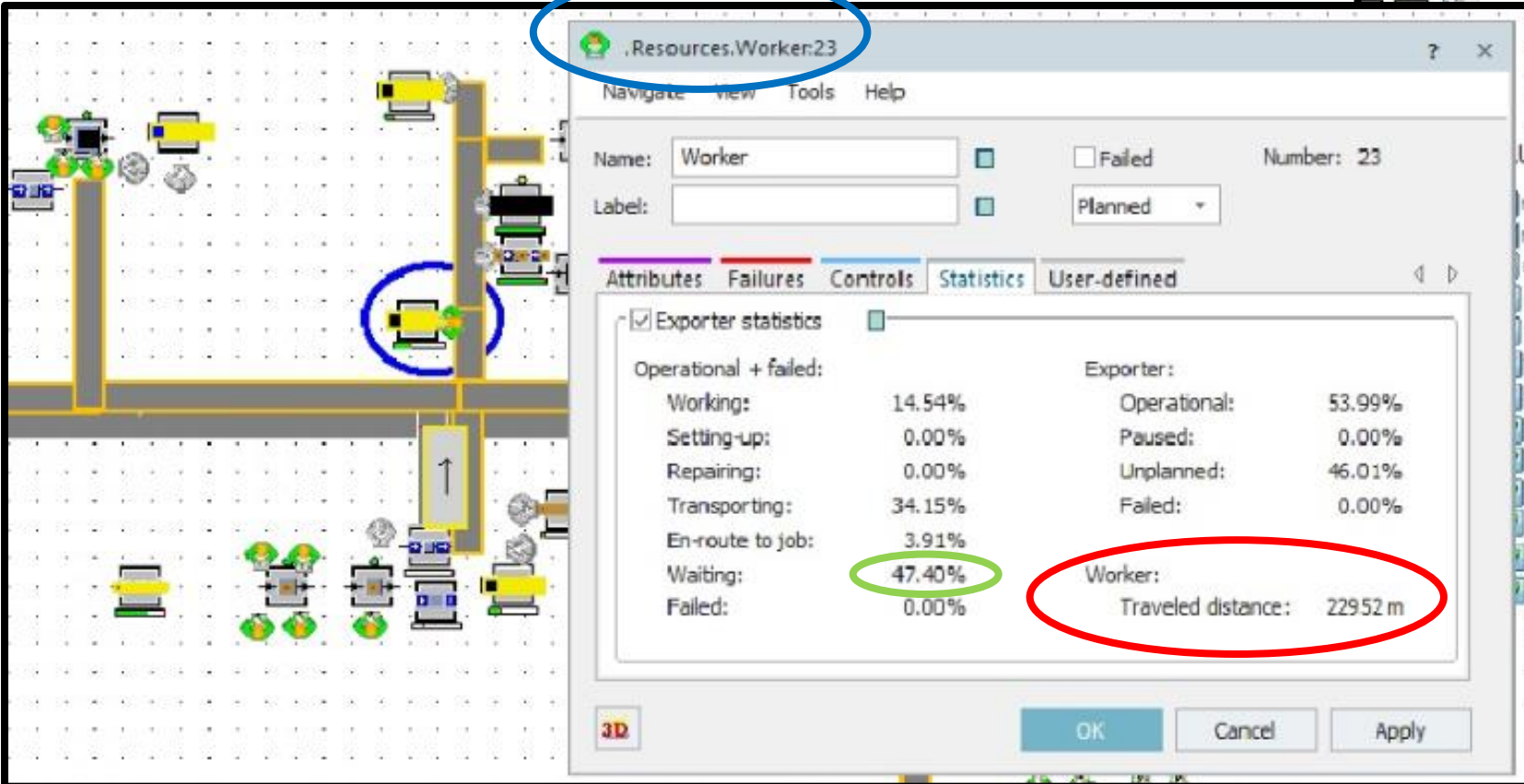
**FAILURES**

- Mixer1
- Mixer2
- Extruder1
- Extruder2
- Tlud1
- Tlud1.1
- Tlud2
- Tlud12
- Dryer1
- Dryer2
- Packaging1
- CocoCrusher
- Crusher

**PERFORMANCE**

- TotalMixingCicles=121
- TotalTrolleyMade=90
- TotalTrolleyDried=90
- FP\_Kg=13500**

# EXAMPLE: simulation of workload of machines and of production workers





### 3. SGFE's SALES AND DISTRIBUTION





# SOME OF OUR DIRECT END-USERS





# MOST OF OUR DIRECT END-USERS





# SOME OF OUR RETAILERS





# MOST OF OUR RETAILERS



# SGFE's SALES: 2010-2017



1,200,000 kg

1,000,000 kg

800,000 kg

600,000 kg

400,000 kg

200,000 kg

kg

2010

2011

2012

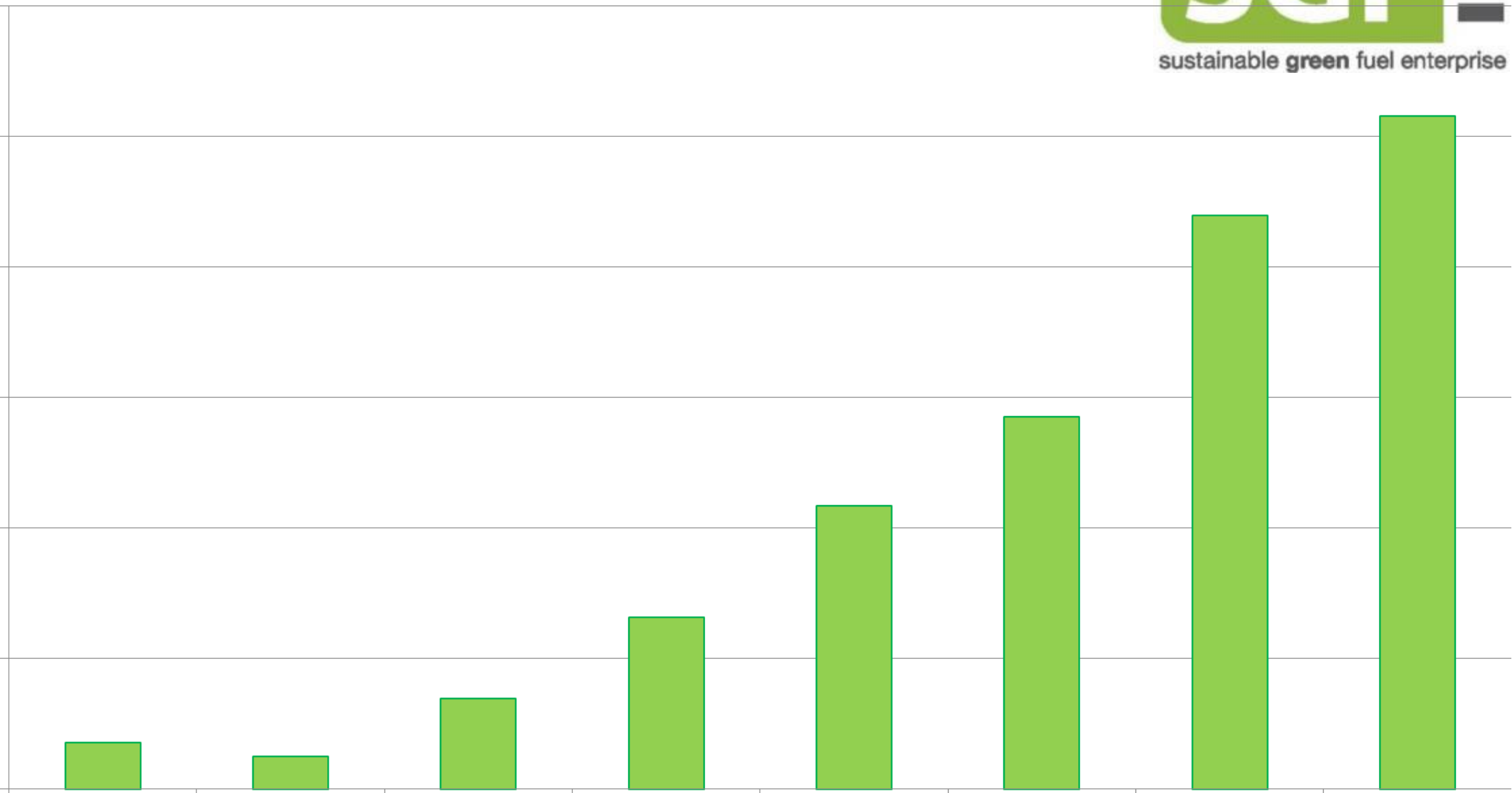
2013

2014

2015

2016

2017





# Thank you for your attention!

**Carlo Figà Talamanca – CEO**

M: +855 (0)97 8159256

E: [carlo@sgfe-cambodia.com](mailto:carlo@sgfe-cambodia.com)

**SGFE office & factory:**

Phlove Lom, Phoum Russey, Sangkat  
Stueng Meanchey, Khan Meanchey,  
Phnom Penh, CAMBODIA

T: +855 (0)23 5121888

W: [www.sgfe-cambodia.com](http://www.sgfe-cambodia.com)

