



Envigo — Comprehensive Digital EIA / ESIA Solution

IAIA WEBINAR, MARCH 9TH, 2022

[▶ Short video](#)

eon⁺ eon-plus.com envigo.software



Envigo

OBJECTIVES

→ Place the EIA knowledge and practice in the center

→ Support the work and virtual collaboration of EIA practitioners

→ Encompass the whole EIA process for developments from all industry sectors

APPROACHES

Offer expert knowledge, datasets and methods, collected from relevant literature and practice

Develop custom-made platform using advanced open-source software and Cloud computing

Integrate data from various sources and digital tools

Envigo

OBJECTIVES

→ Attain adaptability for different requirements at various levels

→ Easy comprehension and use, even for basic software users, as well as EIA juniors

→ Engage all stakeholders through the platform and allow for the gradual transformation towards fully digital EIA

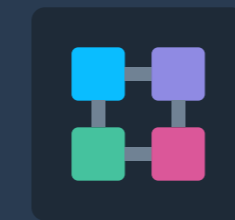
APPROACHES

Exploit system theory and engineering for design of dynamic modular structures and relations

Gradually enhance and simplify user experience and interface, considering user feedbacks

Collaborate with different stakeholders, early in the design and development process

Identifying and Assessing



Workspace

Access to modules, workflow tracking and versioning



Checklists

Input data editing and selection



Matrices

Connection of impacts' factors and attributes



Processors

Impacts evaluation and mitigation measures

Workspace

The image displays two side-by-side screenshots of the Envigo workspace interface, showing the workflow for an Environmental and Social Impact Assessment (ESIA) project.

Left Screenshot: Environmental and Social Impact Assessment for Haimara-1 Exploration Well

- PROCESSING:** Activities (1), Aspects (2), Potential Issues (0).
- SCREENING:** Receptors (1), Sources—Causes (0), Ecosystem Services (ESS) (0), Alternatives (0), Development Phases (0), Development Depend. on ESS (0).
- SCOPING:** Impact Identification (0), Impacts to ESS (0), Engagement Plan (0), Impact Interaction (0), Impact Definition (0), Stakeholder Engagement (0), Alternatives Scoping (0), Impact Characterisation (0), Valuable ES Comp. (VECs) (0).
- ASSESSING:** ROUTINE, ACCIDENT, CUMULATIVE, Impact Assessment (0), Mitigation Measures (0), Alternative Assessment (0), Monitoring Plan (0).

Right Screenshot: Environmental and Social Impact Assessment for Haimara-1 Exploration Well Offshore, Guyana (Assessing)

- PROCESSING:** Activities (0), Aspects (0), Potential Issues (0).
- SCREENING:** Receptors (0), Sources—Causes (0), Ecosystem Services (ESS) (0), Categorization (0), Alternatives (0), Development Phases (0), Development Depend. on ESS (0), Stakeholders (0).
- SCOPING:** Impact Identification (0), Impacts to ESS (0), Engagement Plan (0), Impact Interaction (0), Impact Definition (0), Stakeholder Engagement (0), Alternatives Scoping (0), Impact Characterisation (0), Valuable ES Comp. (VECs) (0), Baseline Scope (0).
- PRESENTING:** Presentation Screening (0), Presentation Scoping (0), Presentation Assessing (1).
- REPORTING:** Templates Screening (0), Summary Screening (0), Report Screening (0), PDF Output Screening (0), Templates Scoping (0), Summary Scoping (0), Report Scoping (0), PDF Output Scoping (0), Templates Assessing (0), Summary Assessing (0), Report Assessing (2), PDF Output Assessing (0).

Both screenshots include a 'HOW TO USE' link at the bottom left and a 'BACK TO TOP' link at the bottom right. The right screenshot also features a 'Save version' button in the top right corner.

Checklists

The screenshot shows the 'Activities' checklist in the envigo software. The interface includes a top navigation bar with the 'envigo' logo, 'Workspace', 'Studies', and 'v4' indicators. Below the navigation bar, there are controls for 'Select all', 'Enumerate', 'Expand all', and 'Resume'. The checklist is organized into a tree structure:

- 1 Preparatory, construction, and deconstruction works
- 2 General operations
 - 2.1 Production
 - 2.1.1 Operation
 - 2.1.2 Processing
 - 2.1.3 Cooling
 - 2.1.4 Drying
 - 2.2 Product management
 - 2.2.1 Storing
 - 2.3 Dust suppression and gas management
 - 2.3.1 Particulate removal

The screenshot shows the 'Aspects' checklist in the envigo software. The interface includes a top navigation bar with the 'envigo' logo, 'Workspace', 'Studies', and 'v4' indicators. Below the navigation bar, there are controls for 'Select all', 'Enumerate', 'Expand all', and 'Resume'. The checklist is organized into a tree structure:

- 1 EMISSIONS
- 2 Discharges
 - 2.1 General
 - 2.1.1 Discharge of cooling water
 - 2.1.2 Discharge of heated water
 - 2.1.3 Discharge of suspended solids
 - A time-integrated SS sampler was installed in the stream close to the weir and SS samples were collected every two or three months to measure their Cs-137 concentrations.
 - 2.1.4 Run-off
 - 2.1.5 Pesticides discharge
 - 2.1.6 Fertilizer discharge
 - 2.2 Inorganic compounds
 - 2.3 Metals and compounds
 - 2.4 Chlorinated organic substances
- 3 Land Use Change and Contamination
 - 3.1 Physical and structural changes of soil
 - 3.1.1 Land tenure
 - 3.1.2 Intensive land use
 - 3.1.3 Land use Change/Land take

Matrices

envigo Impact Identification

Workspace Studies v4

Collapse all Resume

	Atmosphere									Hydrosphere									Lithosphere			Biosphere								
	Air	Local air quality	Regional air quality	Climate	Global temperature	Humidity	Wind pattern	Local temperature	Micro climate	Green house gases	Ozone layer	Surface water quality	River	Lake	Creek	Pond	Surface water quantity	River	Creek	Ground water	Ground water quality	Ground water quantity	Marine water	Marine water quality	Soil quality	Sediments	Arable land	Flora	Aquatic flora	Terrestrial flora
+ Dust from transport		+																												
+ CO emission from diesel generators			+					+																						
+ Discharges from cooling								+																						
+ Produced water discharges from cooling																														
+ Storm water runoff from cooling																														
+ Hazardous and non-hazardous drainage from storing																														
+ Heavy metal discharges from use of vehicles																														

envigo Impact Characterisation

Workspace Studies v4

Collapse all Resume

	Sign	Type	Class	Development phase	Alternative	Evaluation approach
	Positive Negative	Direct Indirect Induced	Routine / Recurrent Non-Routine / Accident Cumulative Ecosystem Services	Exploration and Preparation Planning and design Construction Operation Decommissioning Non-routine events	Site Selection for GTP and Power Plants Onshore/Offshore Gas Treatment Drilling and Wells Shoreline Crossing Offshore Gas Pipelines	Basic Envigo
↳ Impact on regional air quality due greenhouse gas emissions (GHGs) from diesel generators						
↳ Impact on local air quality greenhouse gas emissions (GHGs) from diesel generators						
↳ Impact on local air quality due dust emissions from earthworks						
↳ Impact on local air quality due dust emissions from machinery	+					
↳ Impact on regional air quality due CO emissions from work camps	+					
↳ Impact on regional air quality due CO emissions from transport	+					
↳ Impact on local air quality due CO emissions from combustion						
↳ Impact on local air quality due CO emissions from diesel generators						
↳ Complex impact pathway						
↳ Contamination of river due benzene discharges from drilling						
↳ Contamination of river due to benzene discharges from dredging						
↳ Impact on soil quality due hazardous and non-hazardous drainage from storing						
↳ Impact on sediments due hazardous and non-hazardous drainage from storing						

Processors

envigo Impact Assessment ROUTINE

Workspace Studies v4 Resume

Columns

IMPACT PHRASE	ACTION	SIGNIFICANCE	SIGN	DEVELOPMENT PHASE	METHOD APPROACH
Impact on regional air quality due greenhouse gas emissions (GHGs) from diesel generators	Assess	VIEW ALL	-2 Negative	Decommissioning	Basic
Impact on local air quality greenhouse gas emissions (GHGs) from diesel generators	Assess	VIEW ALL	-2 Negative	Construction Operation	Basic
Impact on local air quality due dust emissions from earthworks	Assess		Negative	Construction Operation	Envigo
Impact on local air quality dust emissions from machinery	Assess	VIEW ALL	-2 Negative	Construction Operation	Basic
Impact on regional air quality due CO emissions from combustion	Assess		Negative	Operation	Method 2
Impact on local air quality due CO emissions from diesel generators	Assess		Negative	Construction Operation	Method 2
Impact on local air quality due CO emissions from use of fuel	Assess		Negative	Construction Operation	Basic
Complex impact pathway	Assess		Negative	Non-routine events	Method 3
Contamination of river due benzene discharges from drilling	Assess		Negative	Construction Decommissioning	Envigo
Contamination of river due to benzene discharges from dredging	Assess	VIEW ALL	-3 Negative	Operation Decommissioning	Basic

Include or exclude column

- Sign
- Type
- Class
- Development phases
- Method approach

Confirm Cancel

envigo Impact Assessment ROUTINE

Workspace Studies v4

Columns Resume

Construction and Commissioning Operation Decommissioning

Evaluation method: Envigo, negative impacts, Air receptor

Impact on local air quality due CO emissions from diesel generators -2

Magnitudes / Dimensions	Intensity / Quantity	<input checked="" type="radio"/> Small	<input type="radio"/> Medium	<input type="radio"/> Large	
	Receptor sensitivity	<input type="radio"/> Low	<input checked="" type="radio"/> Moderate	<input type="radio"/> High	
	Distribution / Scale	<input type="radio"/> On site	<input checked="" type="radio"/> Local	<input type="radio"/> Widespread	<input type="radio"/> Transboundary
	Duration	<input checked="" type="radio"/> Short	<input type="radio"/> Medium	<input type="radio"/> Long	
Conditions / Relations	Reversible	<input type="radio"/> Yes	<input checked="" type="radio"/> No		
	Cumulative	<input checked="" type="radio"/> Yes	<input type="radio"/> No		
	Interaction	<input type="radio"/> None	<input checked="" type="radio"/> Weak	<input type="radio"/> Strong	
Confidence	Uncertainty of assessment	<input checked="" type="radio"/> Low	<input type="radio"/> Medium	<input type="radio"/> High	
	Probability of occurrence	<input type="radio"/> Low	<input type="radio"/> Medium	<input checked="" type="radio"/> High	

Copy selection Paste selection Assess

Presenting, Reporting and Participating



Presentations

Impact analysis and
visualization for reports



Digital Reports

ESIA study writing, content
inserting and editing



Reports Commenting

Study reading, reviewing and
commenting



Reports in PDF

Conventional reports
as alternative

Presentations

Table 1.1 Impact Evaluation

EVALUATION METHOD	Magnitudes / Dimensions				Conditions / Relations			Confidence		SIGN
	Intensity / Quantity	Receptor sensitivity	Distribution / Scale	Duration	Reversible	Cumulative	Interaction	Uncertainty of assessment	Probability of occurrence	
Impact on regional air quality due greenhouse gas emissions (GHGs) from diesel generators										
<i>Proposed Development</i>										
Construction and Commissioning	Small	Moderate	Local	Short	No	Yes	Weak	No	Yes	-1
Operation	Medium	Moderate	Widespread	Long	No	Yes	Strong	No	Yes	-2
Decommissioning	Medium	Moderate	Widespread	Long	No	Yes	Strong	No	Yes	-2
<i>Site Selection for GTP and Power Plants</i>										
Construction and Commissioning	Small	Moderate	Local	Short	No	Yes	Weak	No	Yes	-1

Figure 1.1 Impact evaluation scores distribution for different categories

The figure shows two donut charts representing the distribution of impact scores. The 'FPSO' chart shows a distribution of scores: 1 (yellow), 2 (green), 3 (orange), and -2 (red). The 'Post mitigation' chart shows a distribution of scores: 1 (yellow), 2 (green), and -2 (red).

Digital EIA / ESIA Reports

