



Tecnologia de Poligeração com Abastecimento Contínuo de Energia



Motivação

T⚡PACE Motivação

- 
- 1º  500 Bilhões de Toneladas de CO2
 - 2º  270 Bilhões de Toneladas de CO2
 - 3º  175 Bilhões de Toneladas de CO2
 - 4º  100 Bilhões de Toneladas de CO2

**BREAKING NEWS**

AGORA: CÚPULA DE LÍDERES DA COP26 É ABERTA NA ESCÓCIA

António Guterres | secretário-geral da ONU

@CNNBrasil

Brasil prevê aumentar meta de redução de emissões até 2030

VIVO**CNN**
BRASIL

09:58

T⚡PACE Motivação



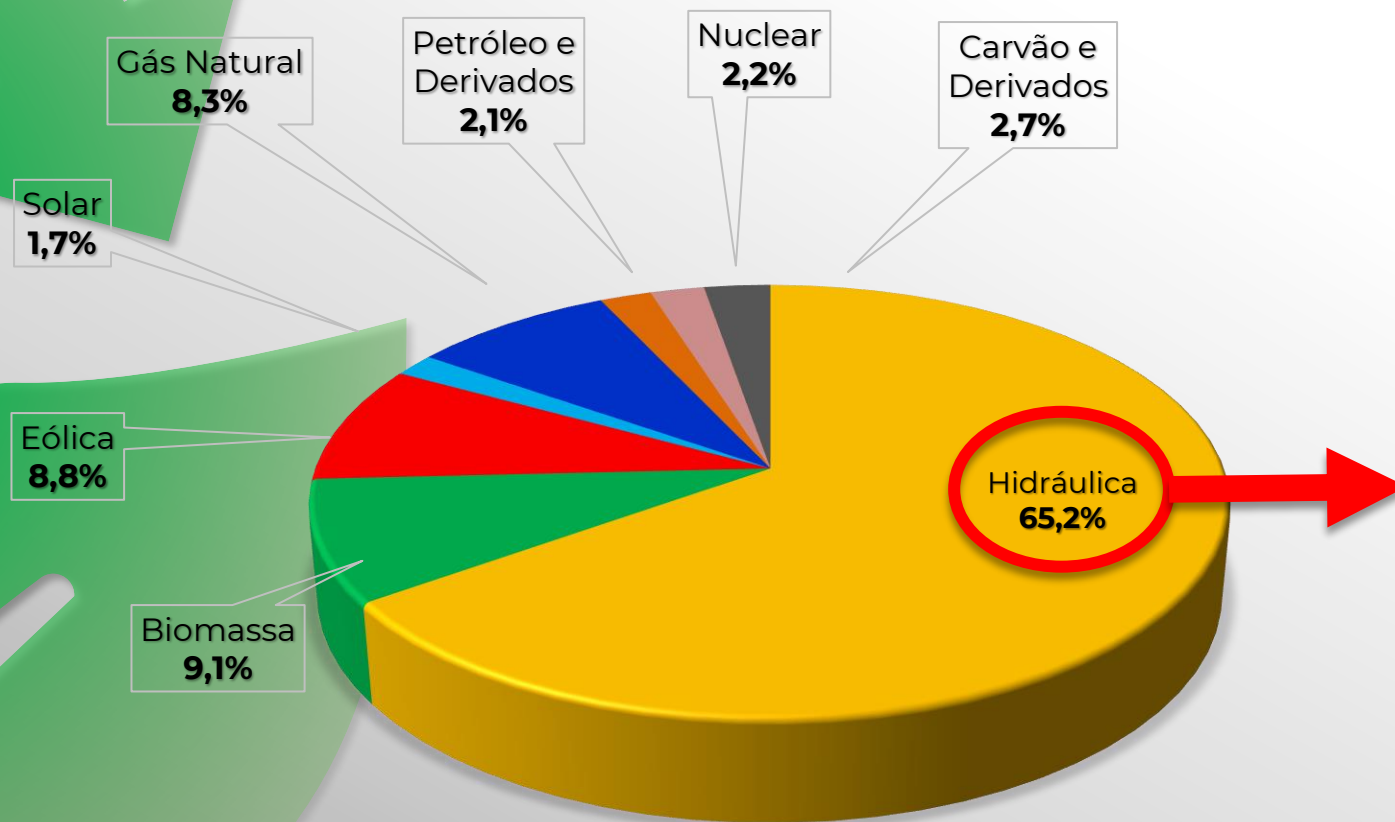
T⚡PACE Motivação





Matriz Energética Brasileira

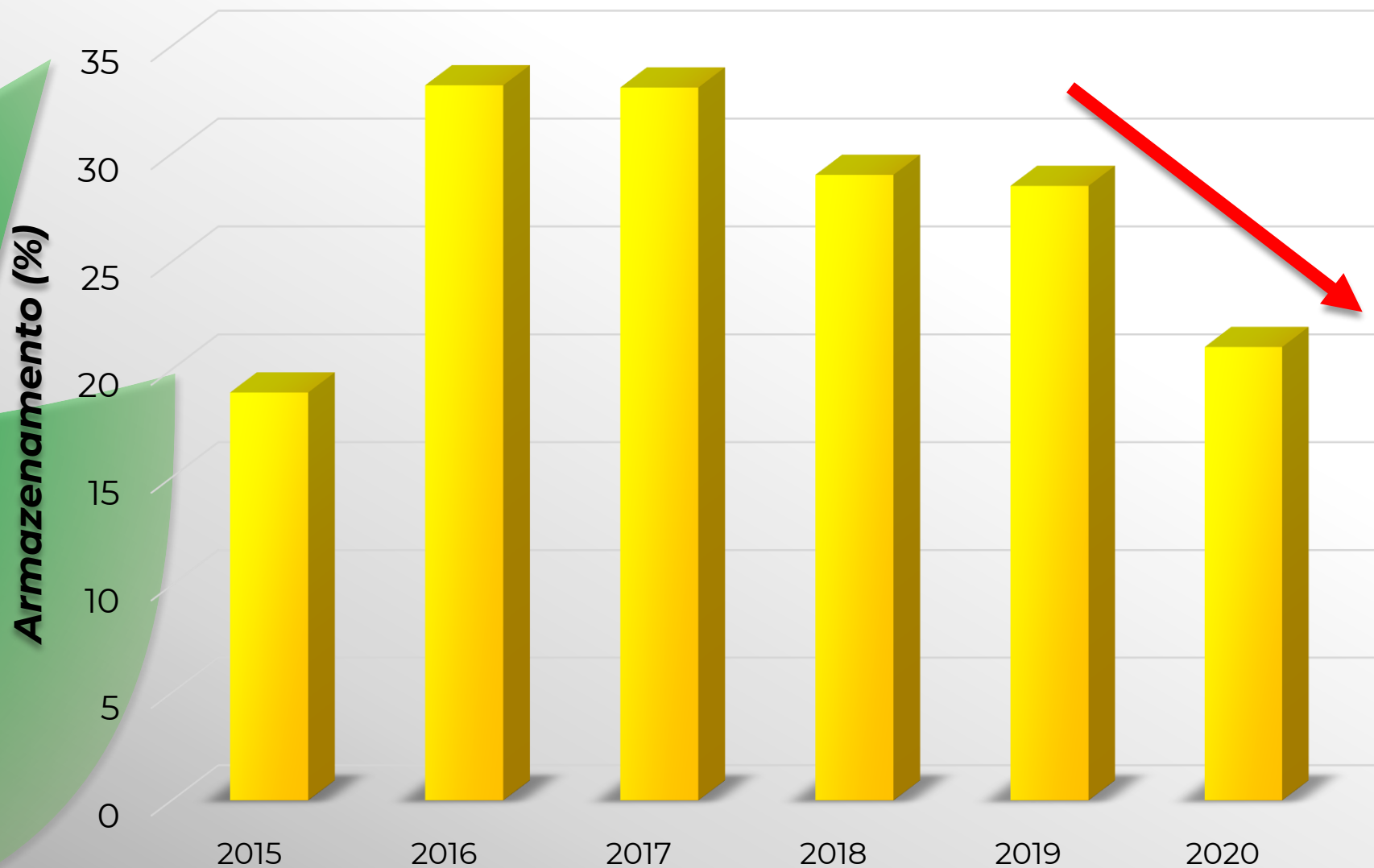
Oferta Total de Energia – Brasil (2020)



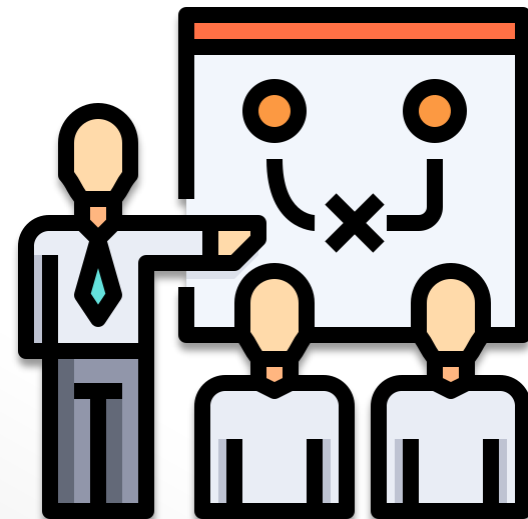


Intermitência

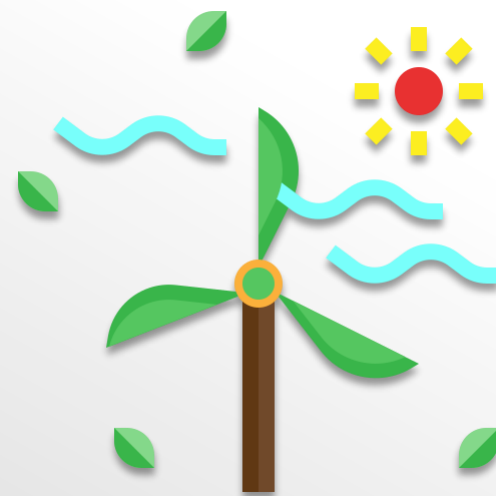
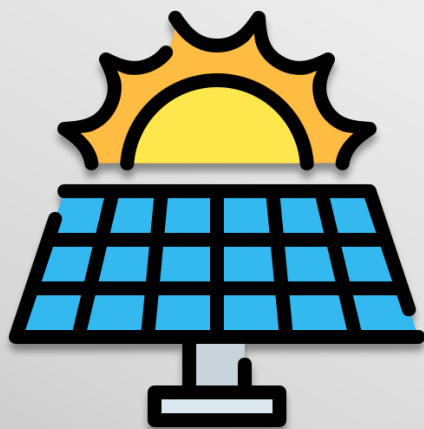
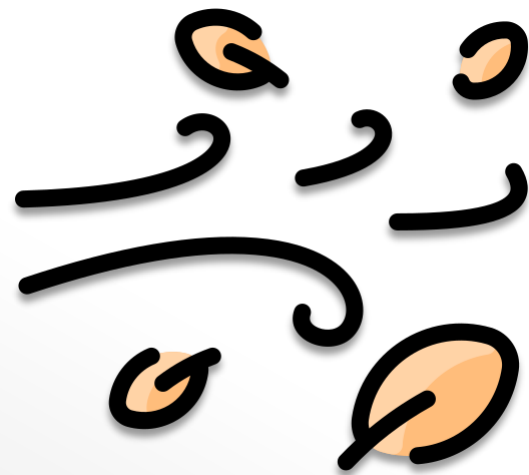
Nível dos Reservatórios do Sudeste e Centro-Oeste



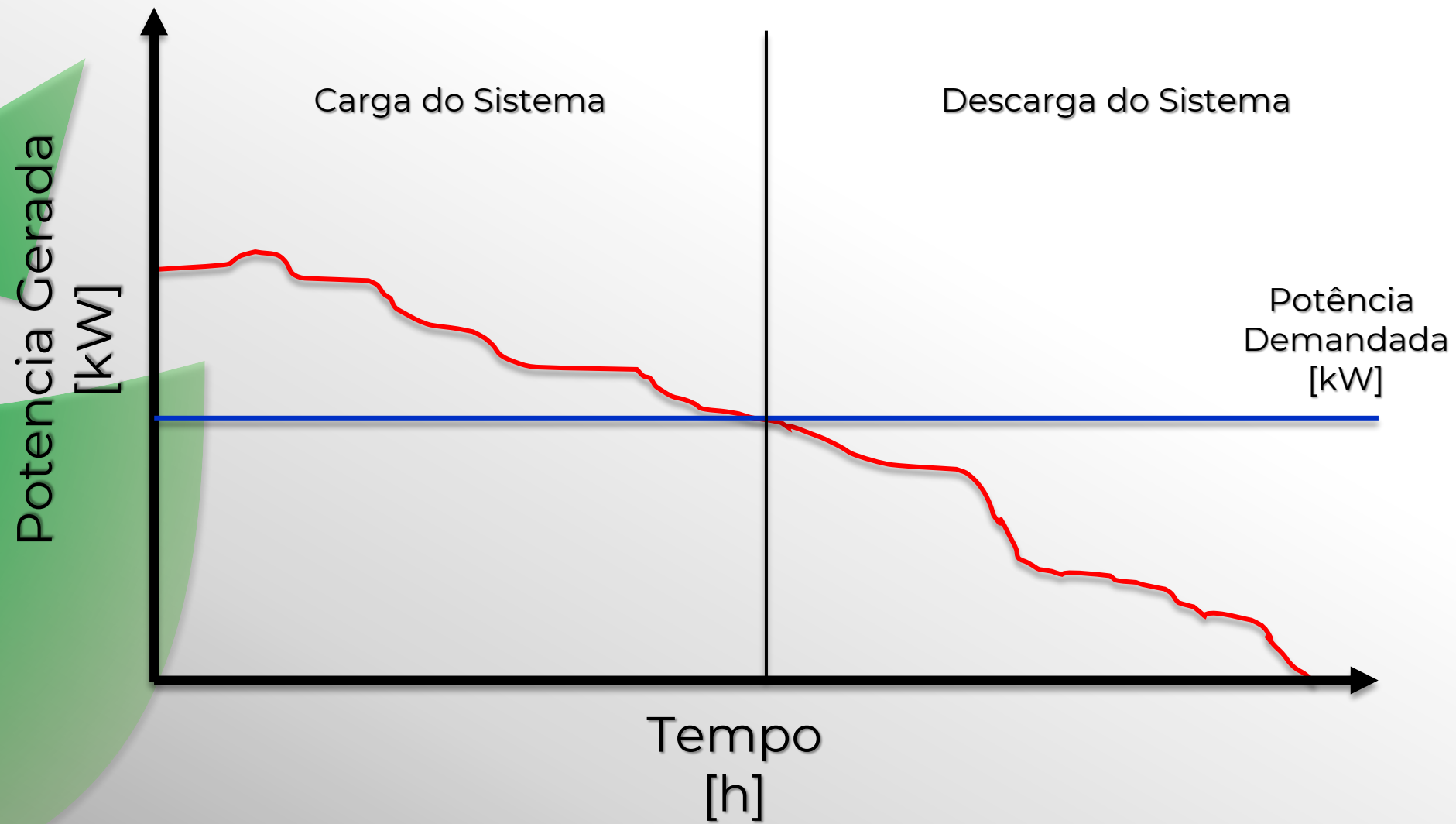
T⚡PACE Intermittência



T **PACE** *Intermitência*



TPACE *Intermitência*

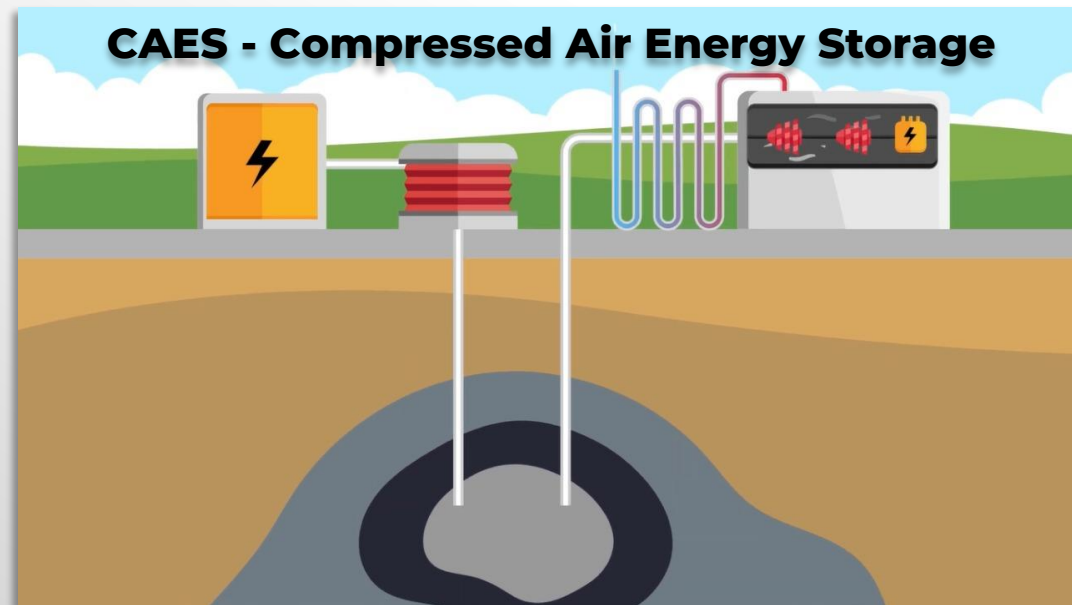


TPACE *Intermitência*

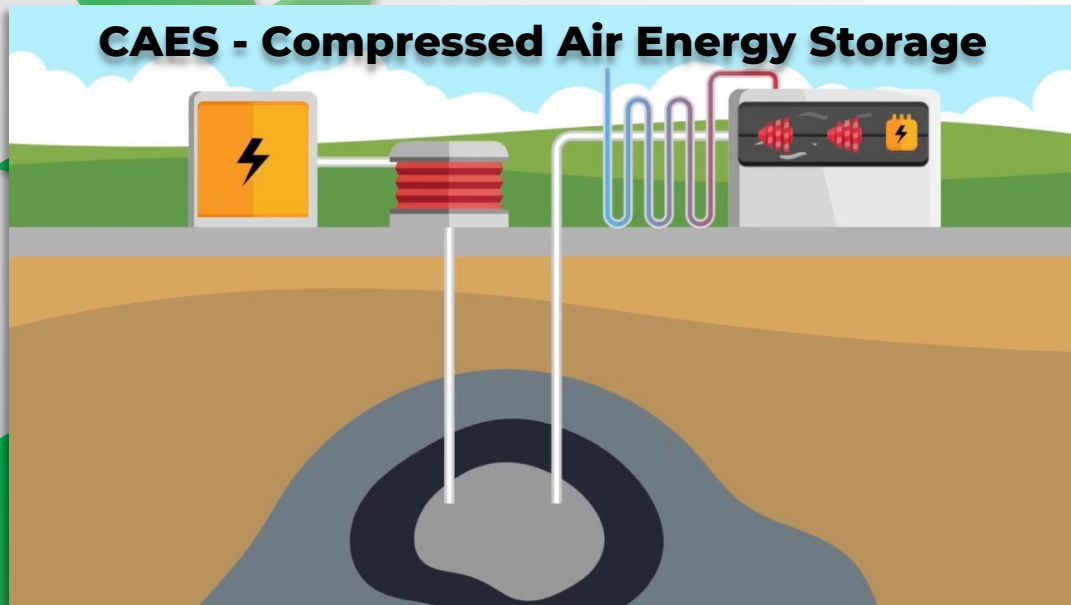
Bateria Eletroquímica



CAES - Compressed Air Energy Storage



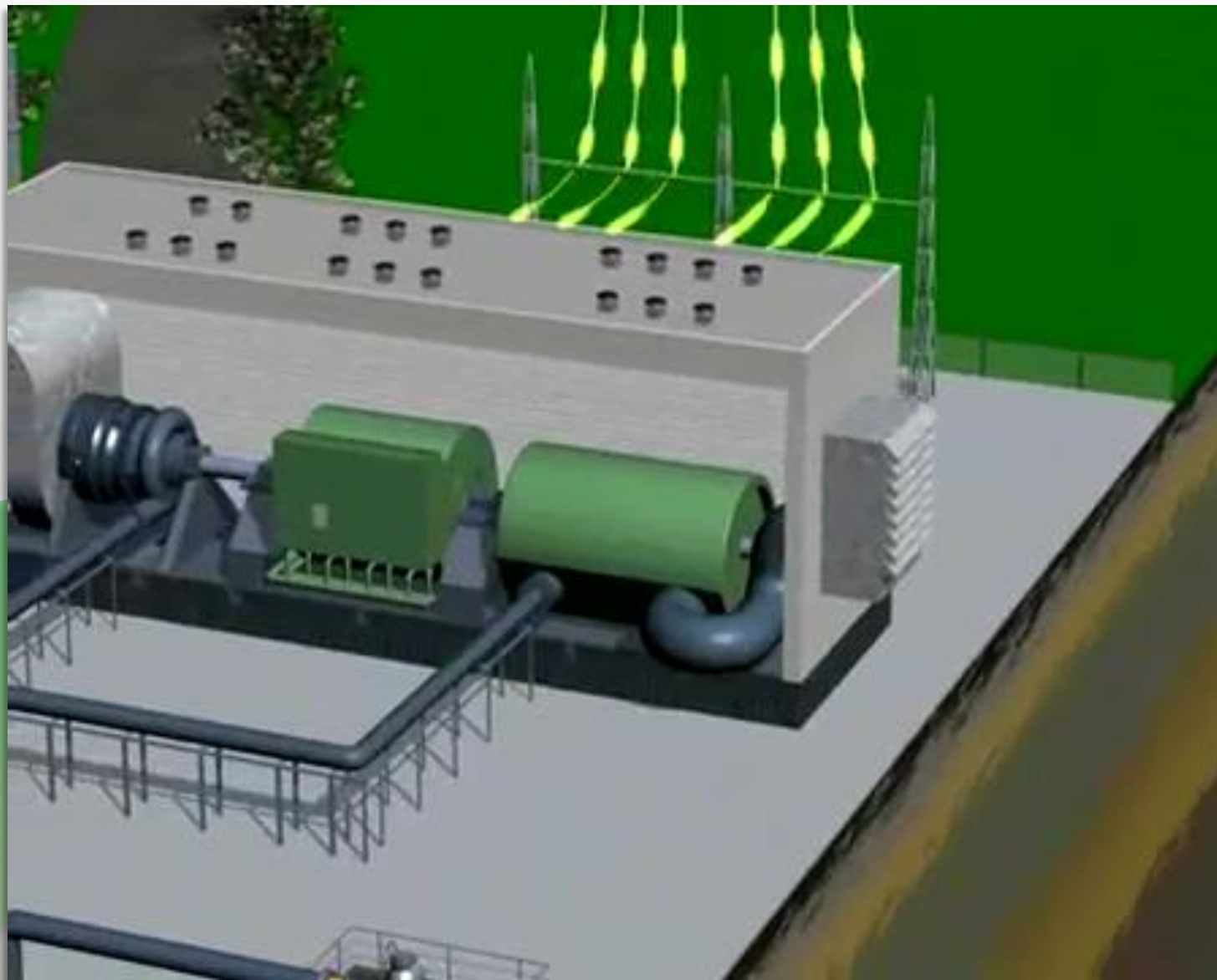
TPACE *Intermitência*





Princípio de Funcionamento

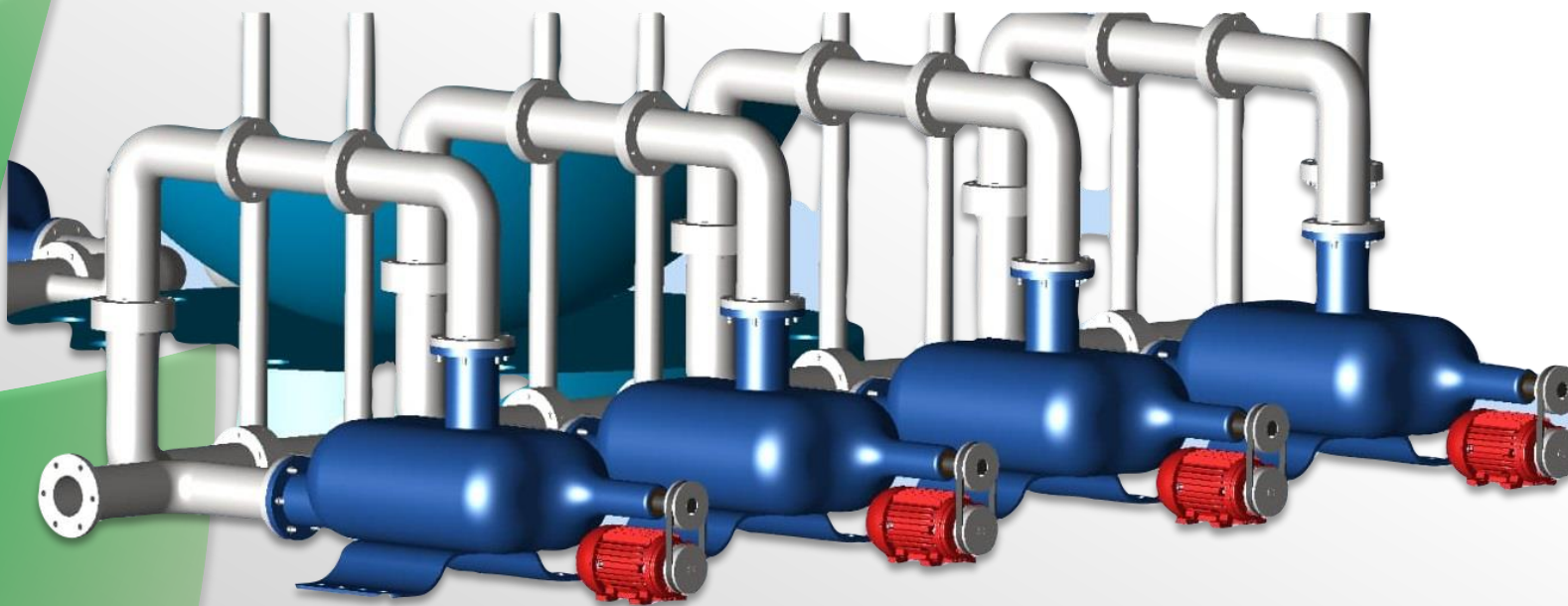
TPACE **Princípio de Funcionamento**





Componentes

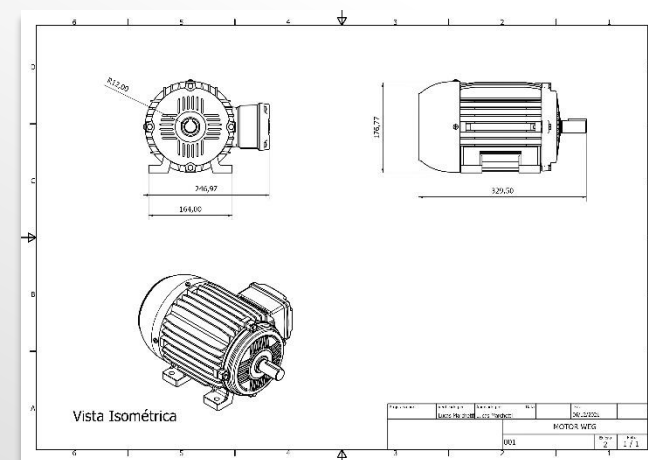
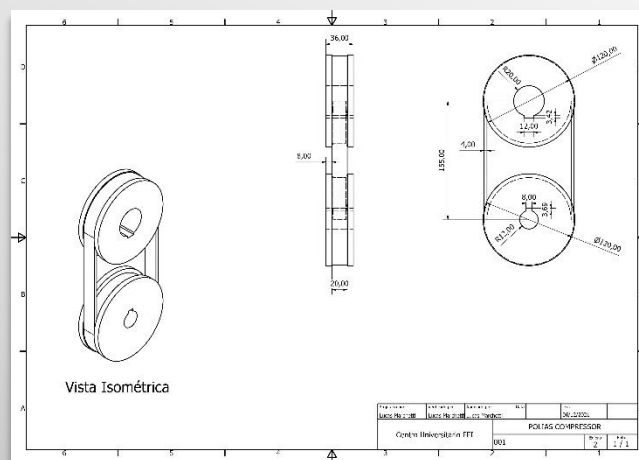
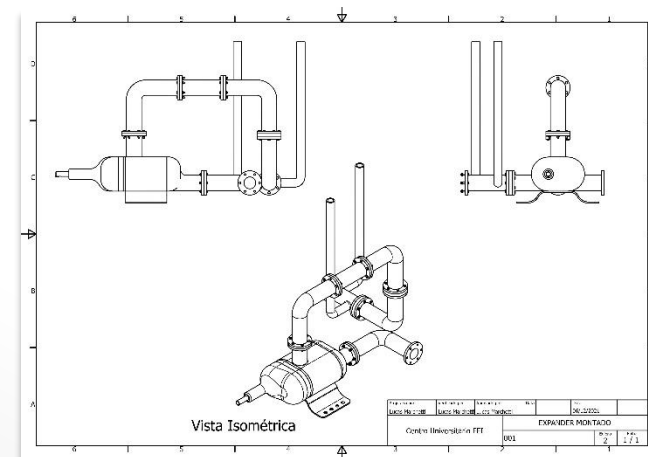
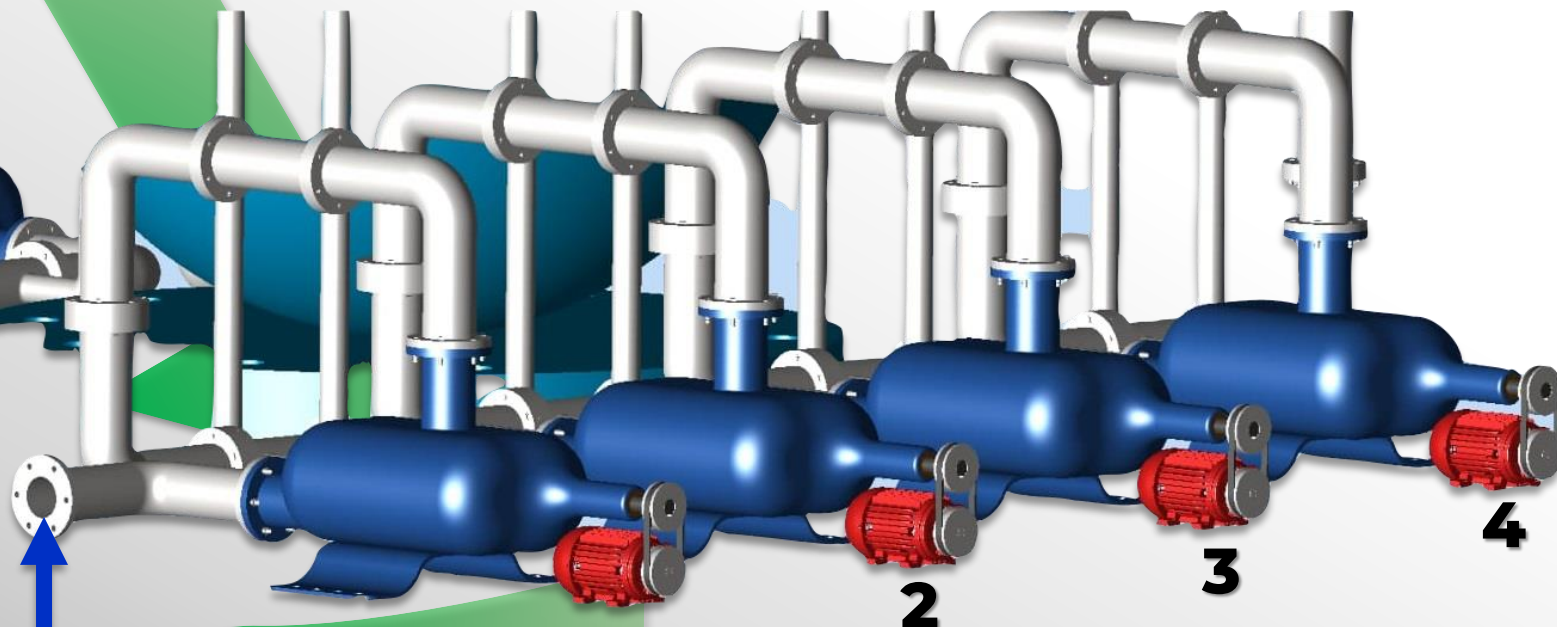
T⚡PACE *Componentes*



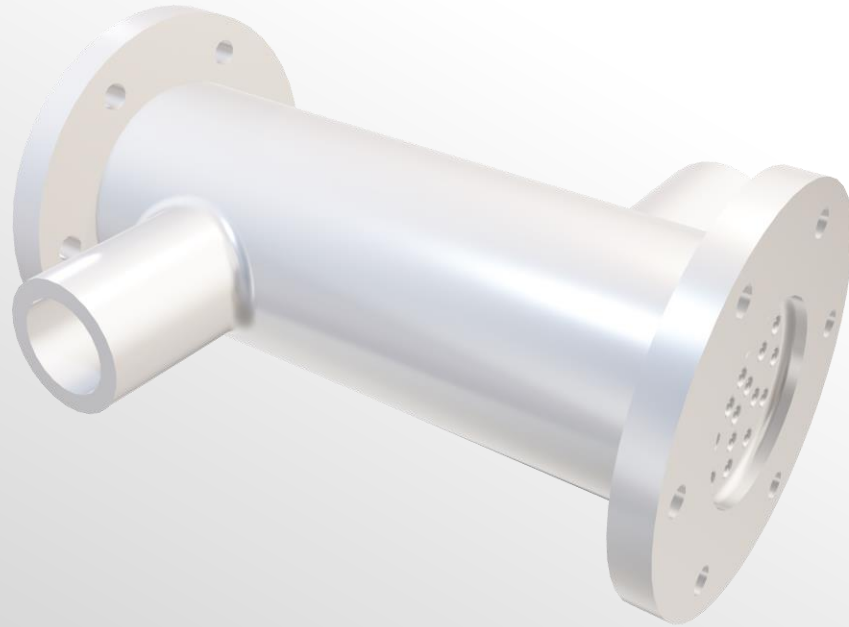
T-PACE Componentes

FC = 3,0

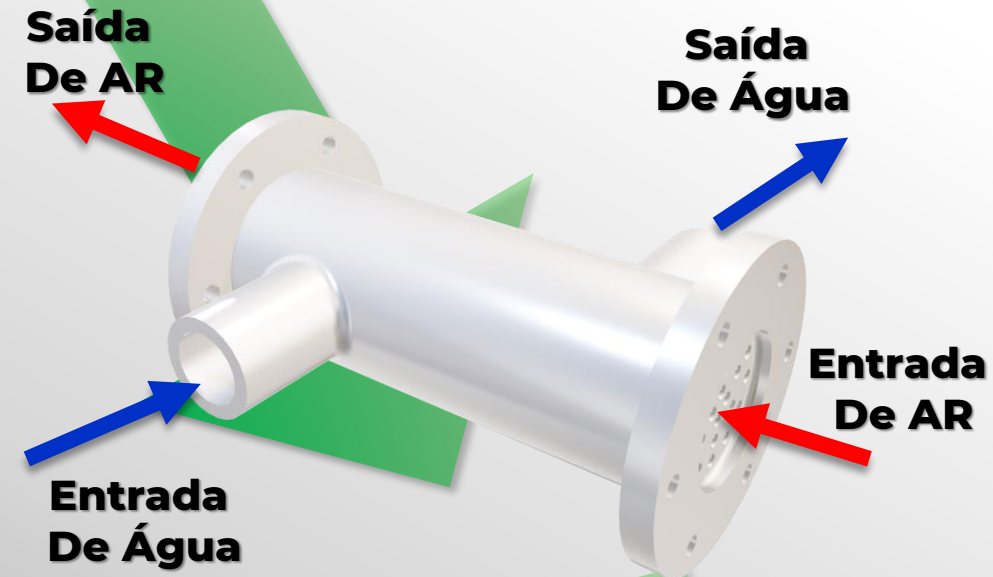
Máx. Pressão = 90 bar



T **PACE** *Componentes*



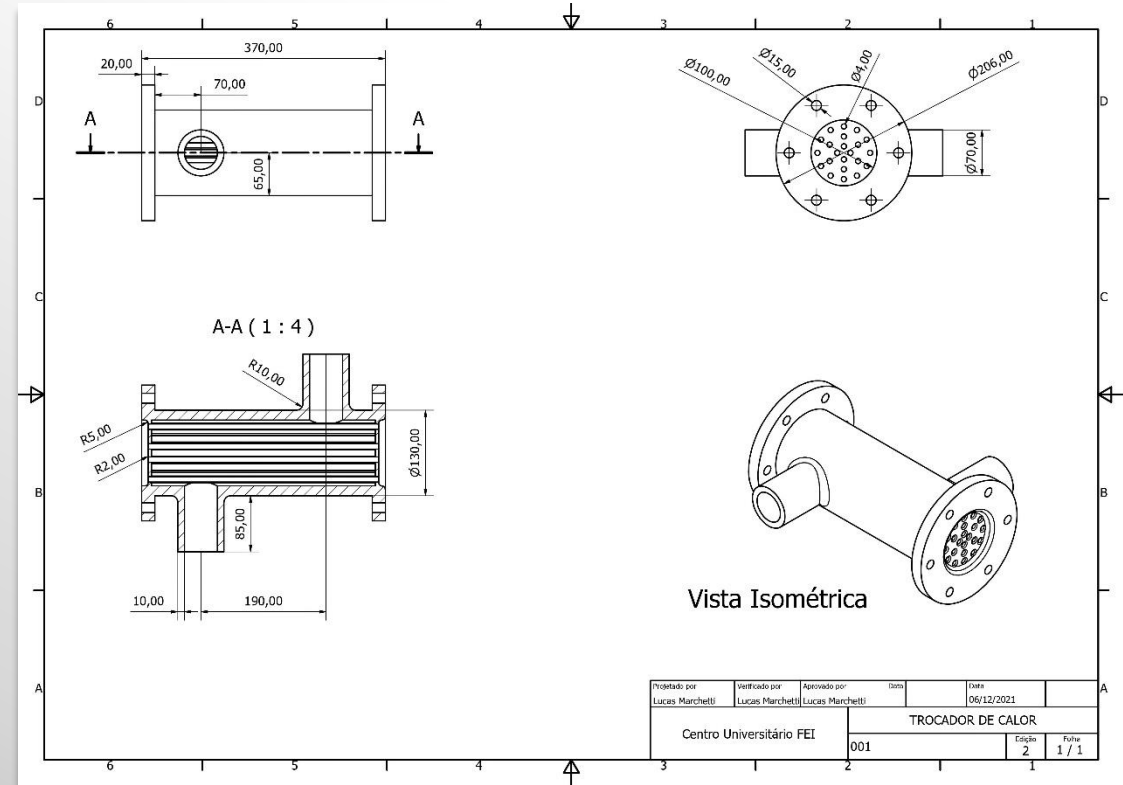
T^{PACE} Componentes



Fluido do Casco: Água

Fluido do Tubo: Ar

Temperatura de Equilíbrio: 27° C



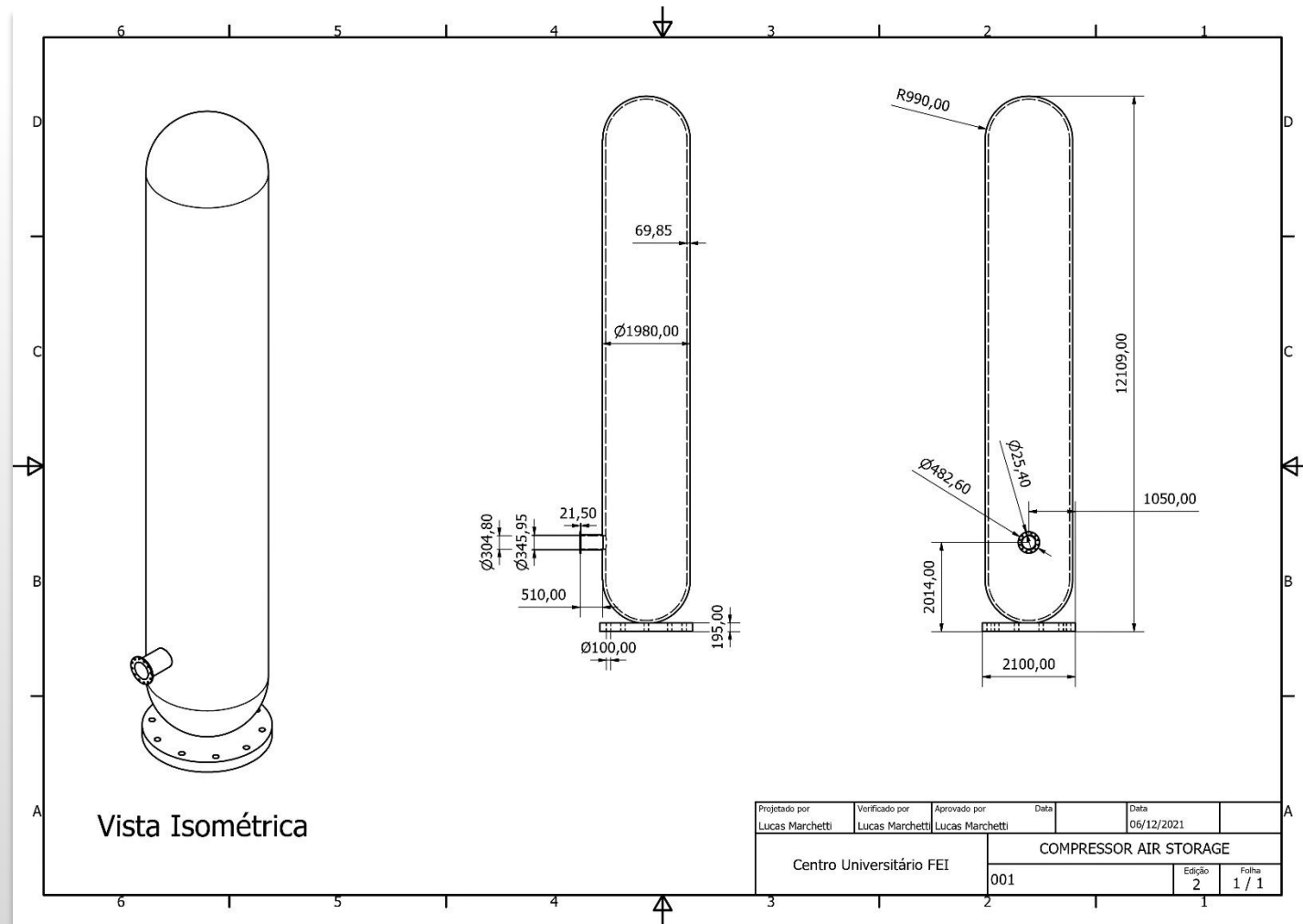
T **PACE** *Componentes*



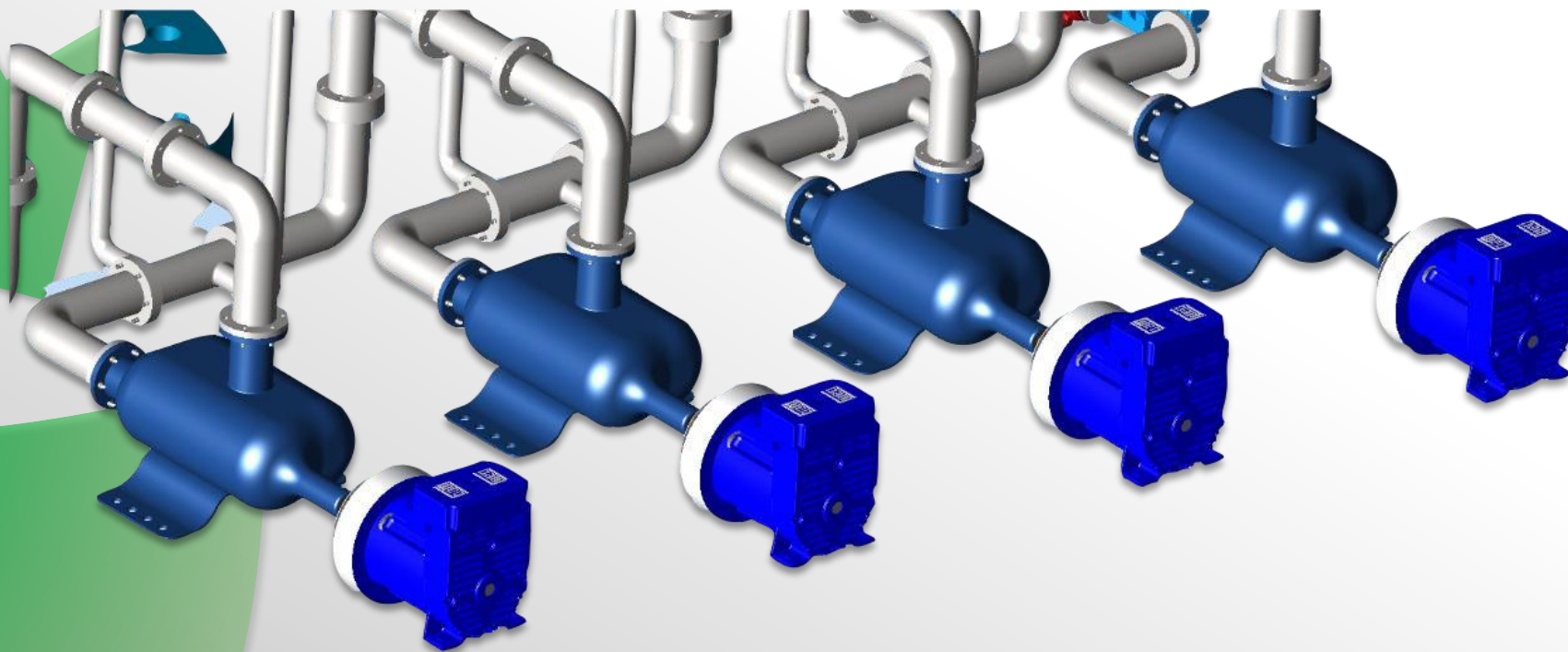
Fluido: Ar

Máx. Pressão: 90 bar

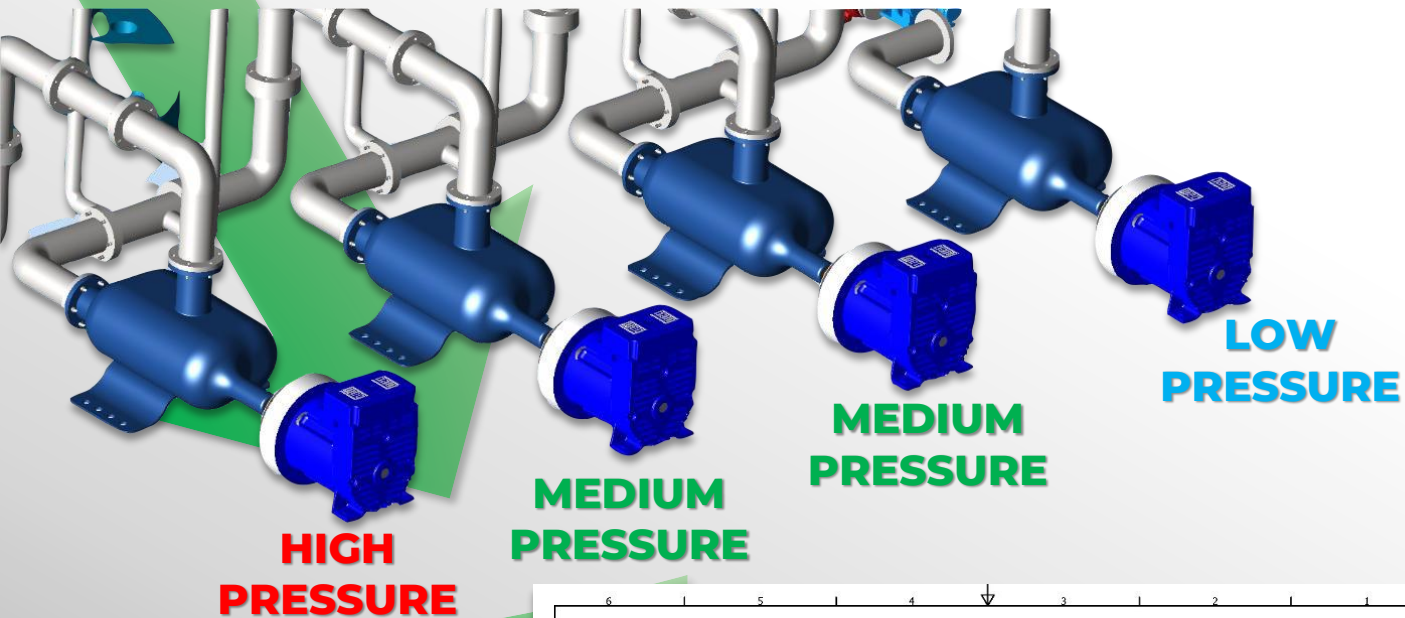
Volume Interno: 30 m³



T⚡PACE Componentes



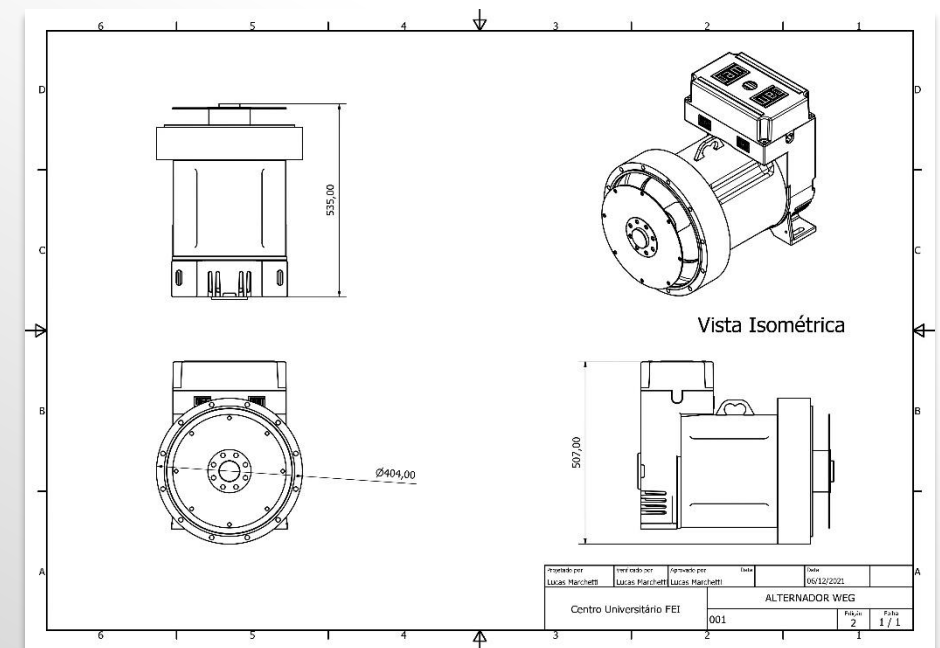
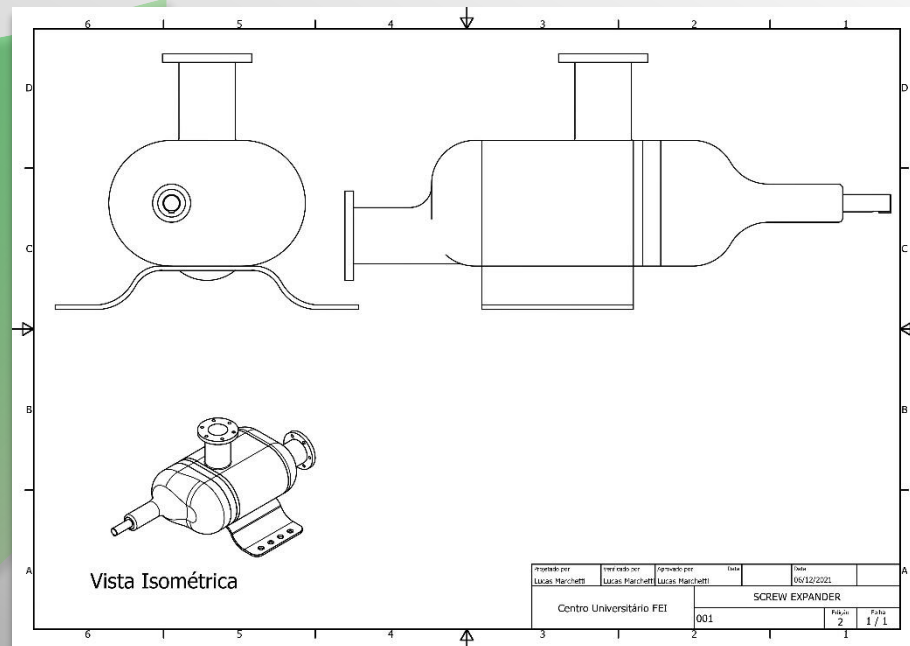
TPACE Componentes



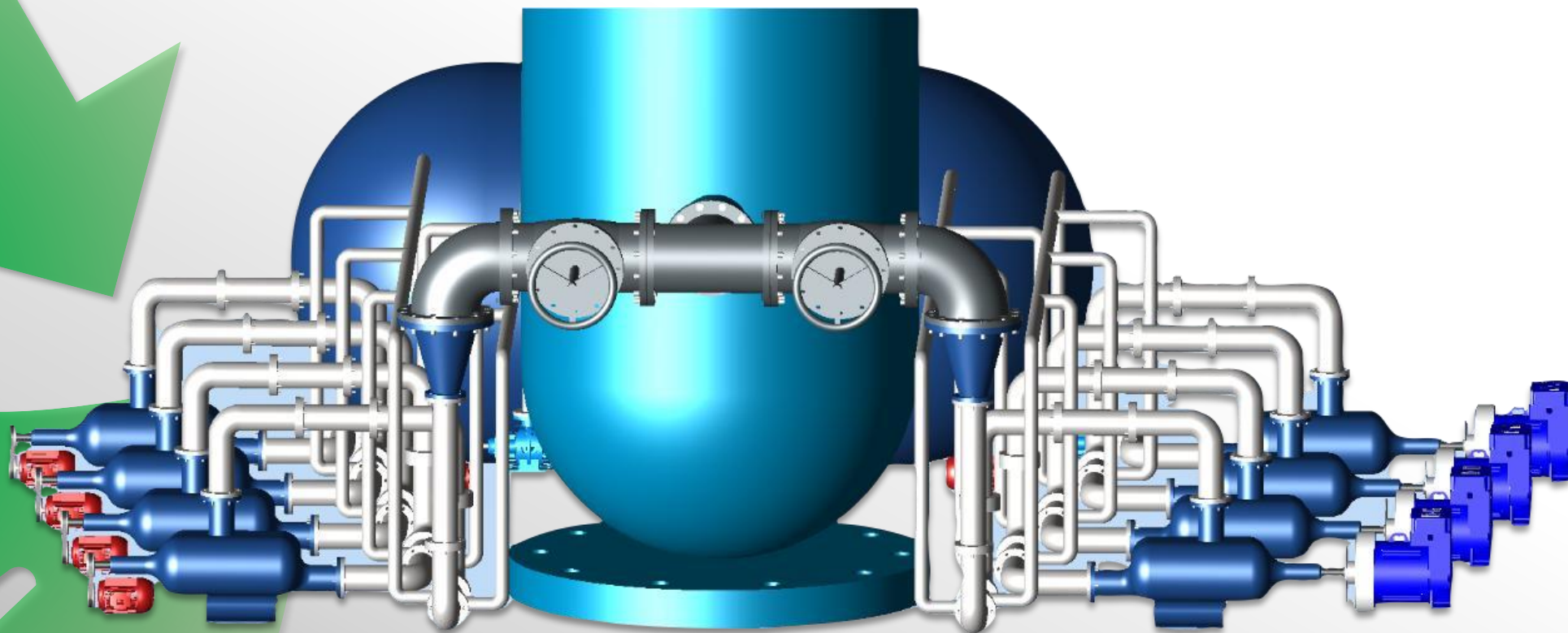
FE = 3,0

Pressão de Entrada: 90 bar

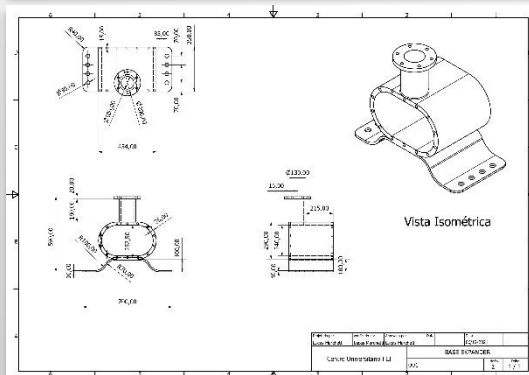
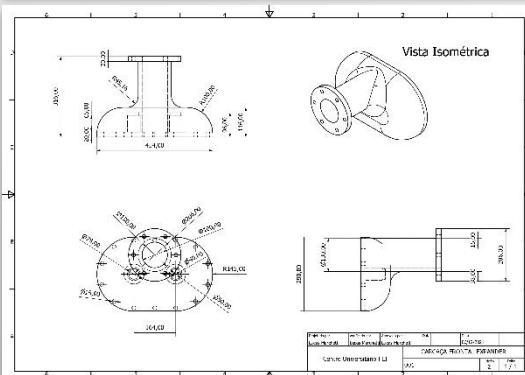
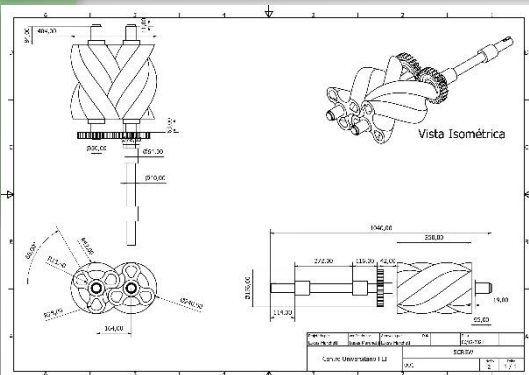
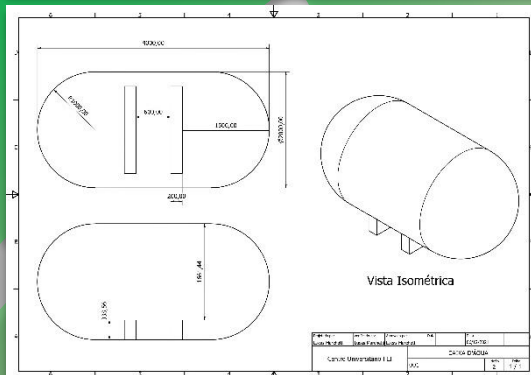
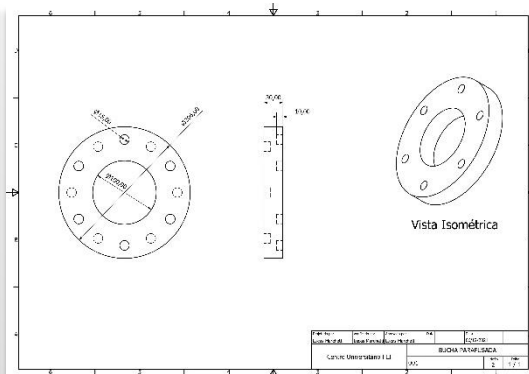
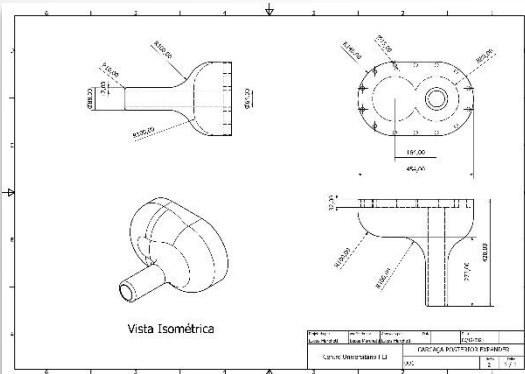
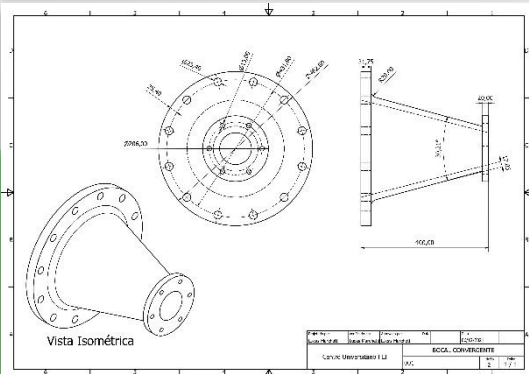
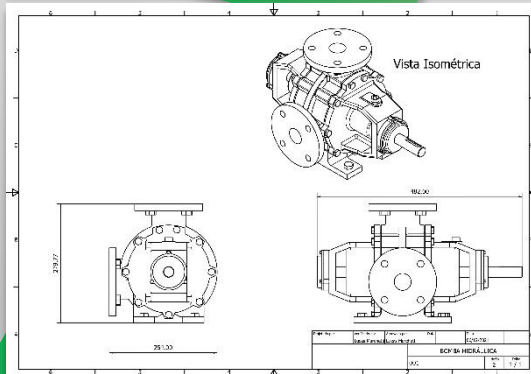
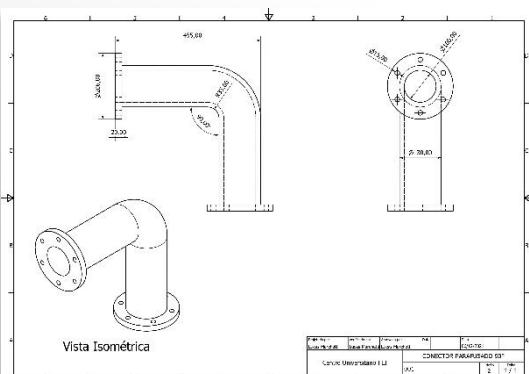
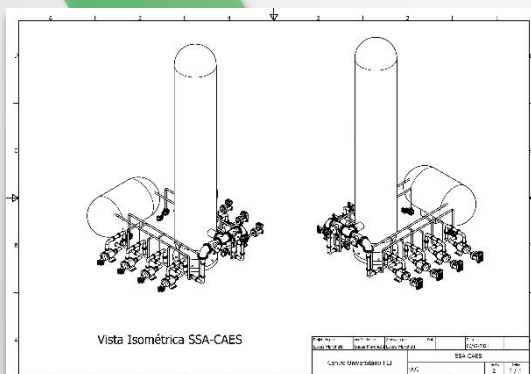
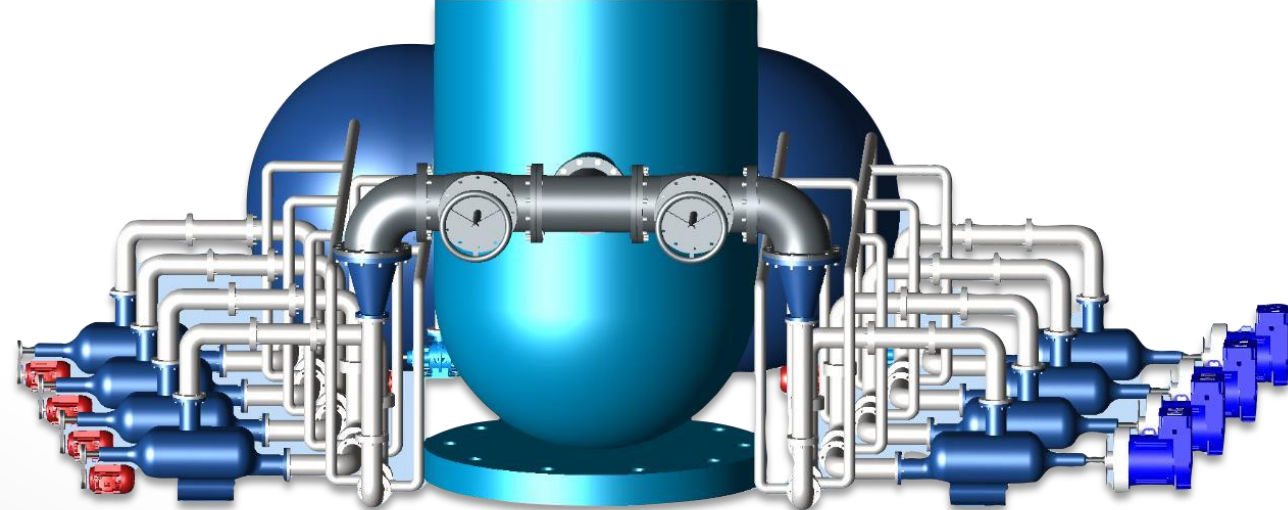
Pressão de Saída: 1,1 bar



T⚡PACE *Componentes*



T³PACE Componentes





Aplicação

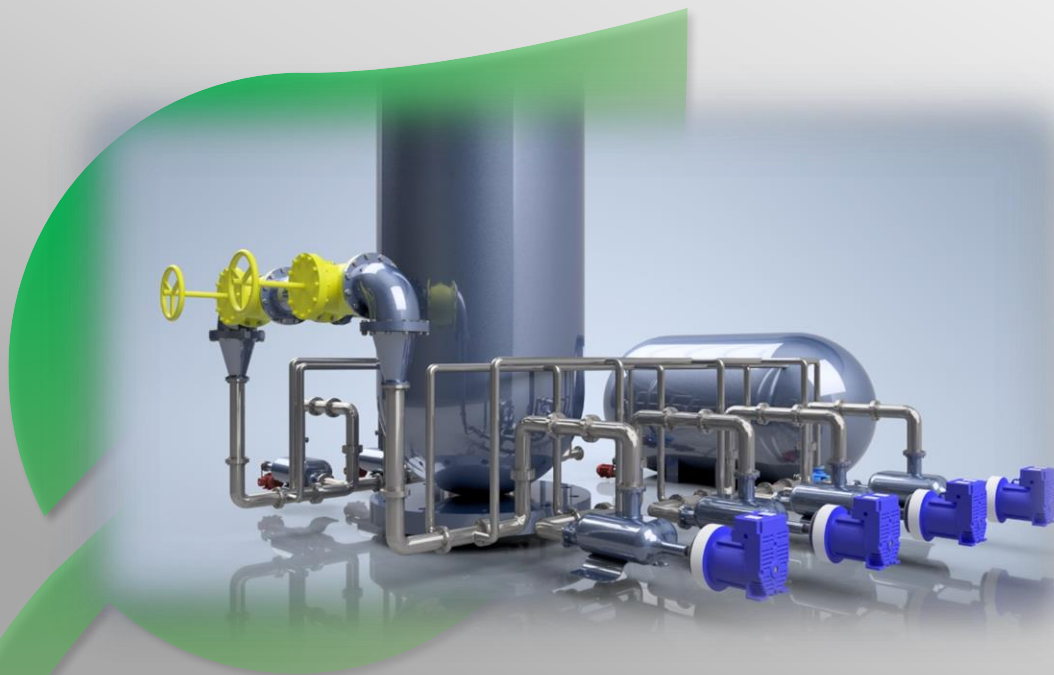
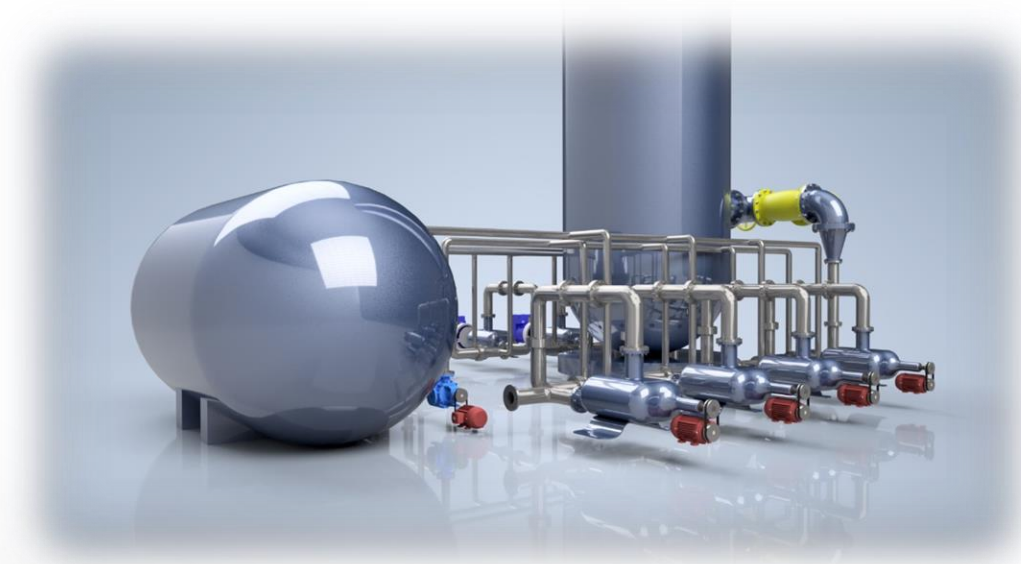
T⚡PACE *Aplicação*



Tempo de Carga: **4 h**



Tempo de Descarga: **4h 30m**

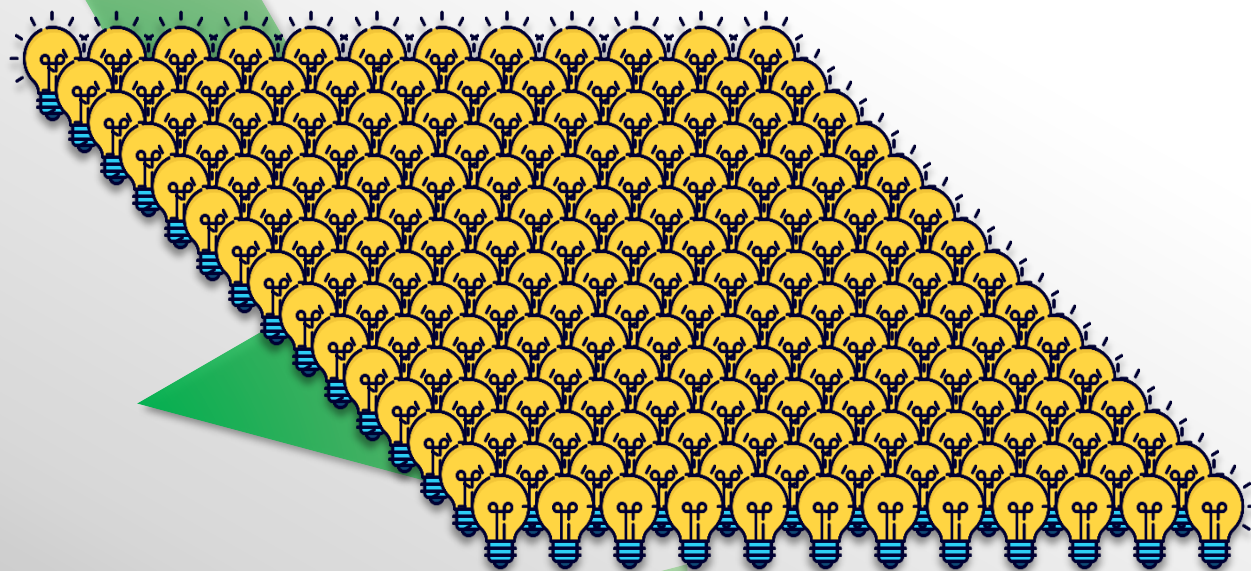


 Potência de Saída: **55 kW**

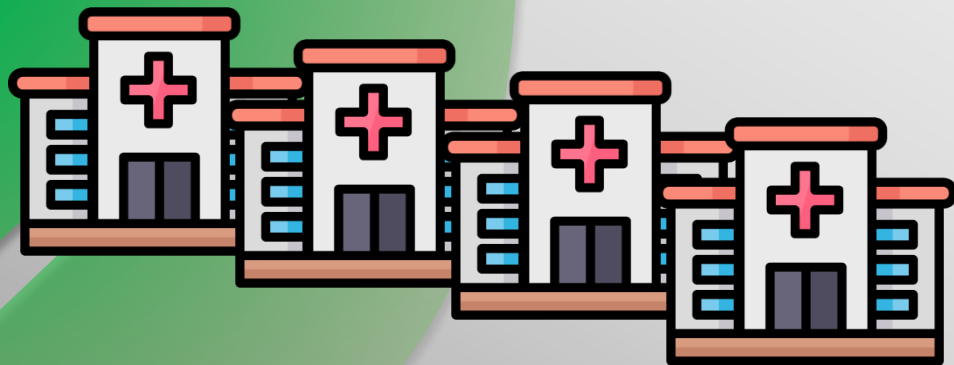
 Armazenamento: **250 kWh**

 RTE = **58%**

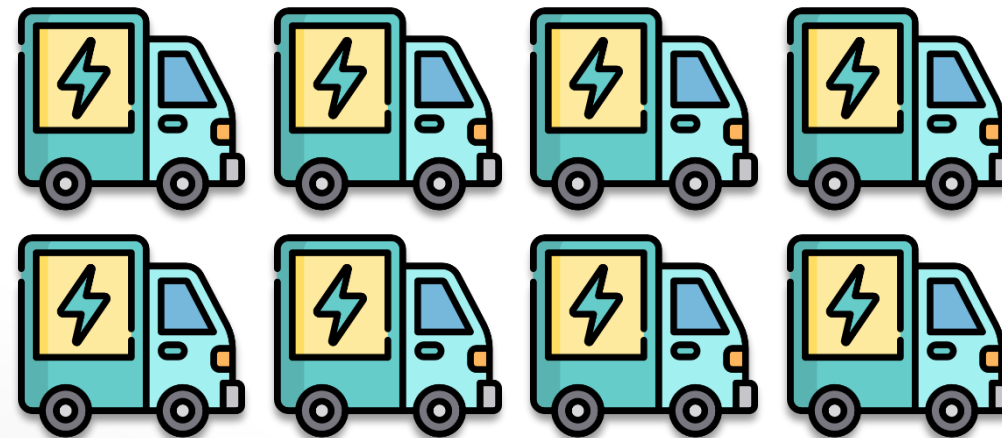
TPACE Aplicação



4.583 Lâmpadas Comuns



25 UBS



8 Caminhões Elétricos

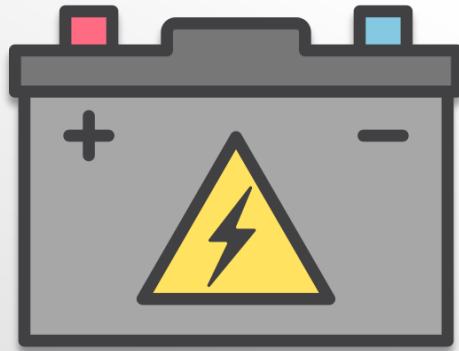


76 Residências



Viabilidade

TPACE *Viabilidade*



10 Anos

5 kWh / carga

R\$ 19.500,00

R\$ 1,07 / kWh

30 Anos

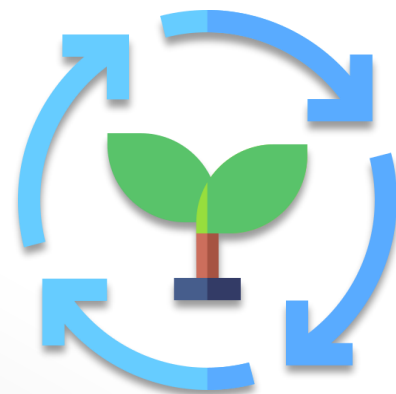
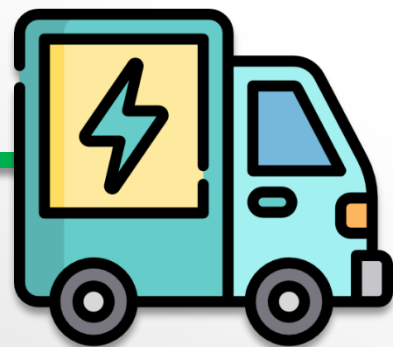
250 kWh / carga

R\$ 5.000.000,00

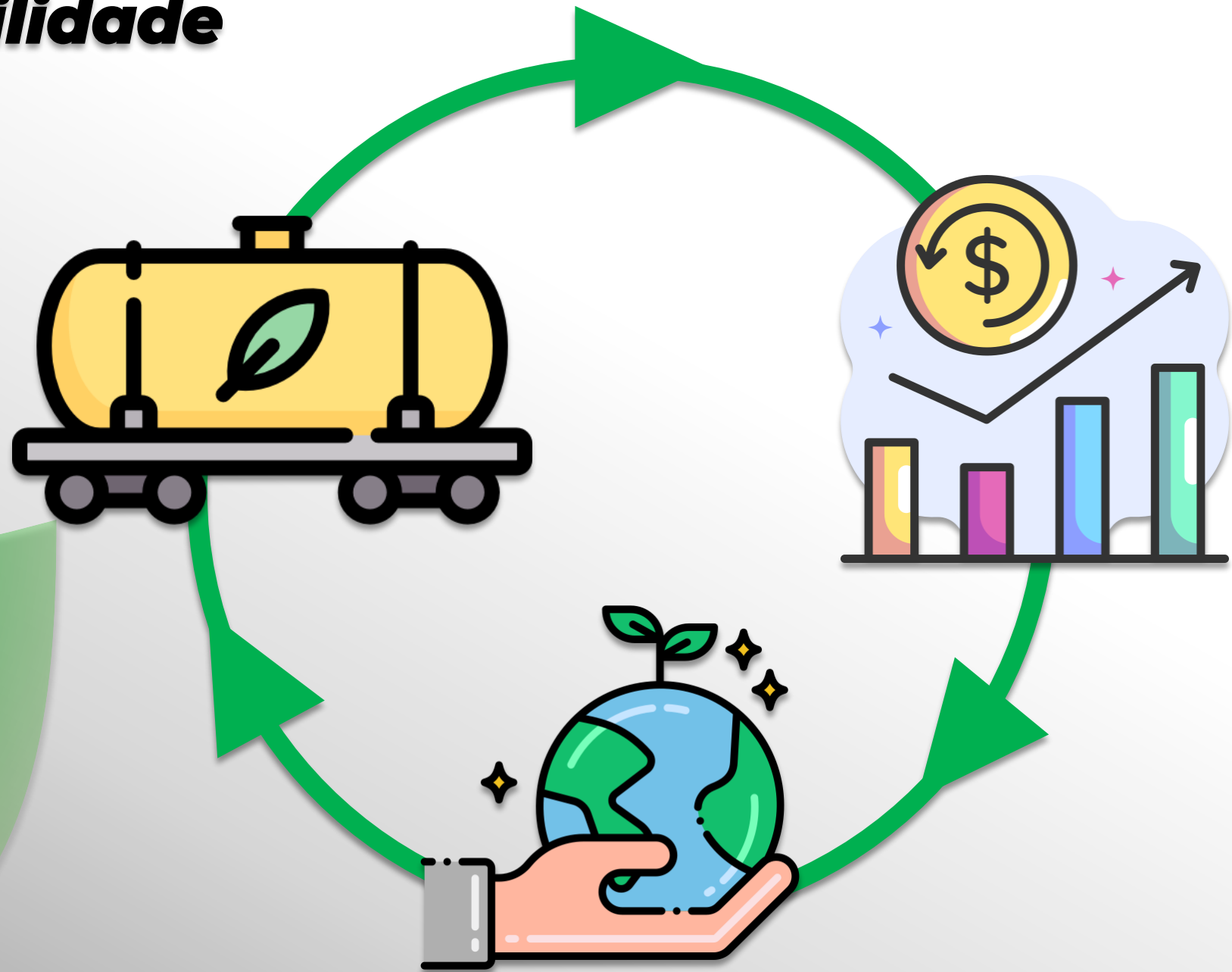
R\$ 1,83 / kWh

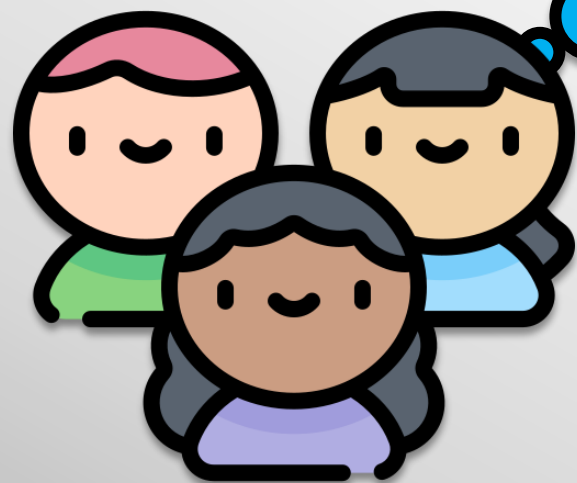


T **PACE** *Viabilidade*



T **PACE** *Viabilidade*







US\$ 38.000.000.000,00



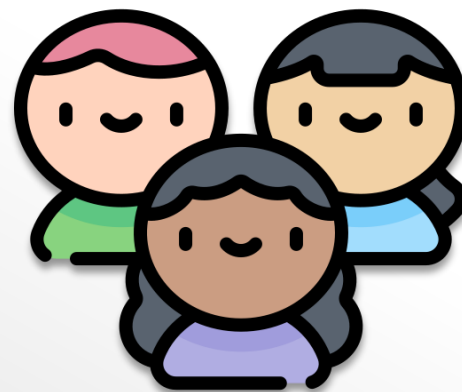
US\$ 53.000.000.000,00



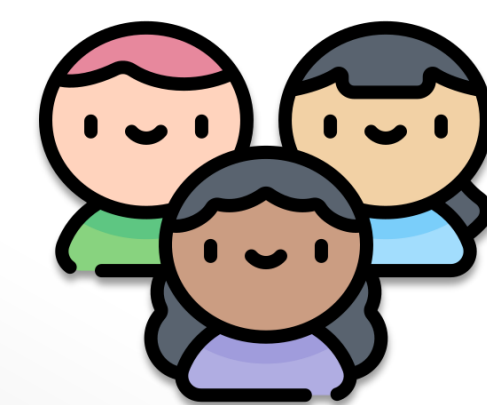
Conclusão



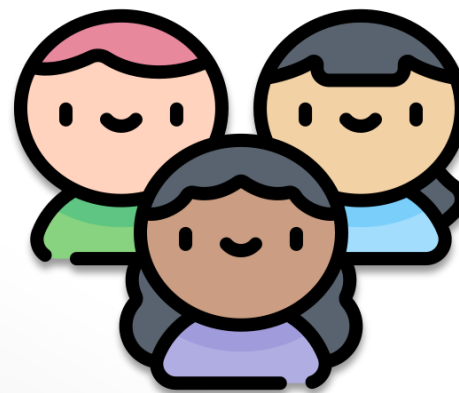




T **PACE** *Conclusão*



T **PACE** Conclusão



Agradecimentos

Prof. Me. Francisco Lameiras Jr.

Prof. Dr. Cyro Albuquerque Neto

Prof. Dr. Arnaldo Forgas Jr.

Prof. Dr. Paulo Eduardo Batista de Mello



ALBERT ANDERSON DE MORAES

Logotipo e Databook



BRUNO BEGNOSSI

Viabilidade Econômica, Legislação e Roteiro



HEITOR FELIPE DE FREITAS

Dimensionamento



IVANA TARCILLA DE MATOS

Impactos Ambientais, Análise de falhas e Benchmarking

JONATAS FUNDARO TORRES NUNES

Dimensionamento, Roteiro e Benchmarking



LEONARDO MENDES DE SOUZA

Impactos Ambientais e Benchmarking



LUCAS LIMA DE MENEZES MARCHETTI

Dimensionamento, Modelagem 3D, Desenhos 2D,
Roteiro, Audiovisual e Líder do Projeto

MARCUS VINYCIUS R DA SILVA

Desenvolvimento WEB



RAFAEL LOPES STOIANOFF

Dimensionamento

WESLEY CLEMENTE





