



- 公司简介

我们ASEP正在开发/运营应急电力设备，其中柴油发动机型应急发电机的智能驾驶盘和设备监控设备，研发应用BMS的能量储存装置（ESS）和混合型应急电力设备等。同时，为构建智慧安全的社会（Smart Safety Society）而前进。

- 公司沿革

2021.10.07 股份有限公司 ASEP 法人转换
2021 中小风险振兴公团青年创业士官学校11期
2021 电气研究院(KERI) - 伊诺波利斯·坎珀斯 选定
2021 庆南创造经济革新中心入选G-Strong5家公司
2021 昌原大学创业保育中心入驻选址
2020 中小风险振兴公团青年创业士官学校10期
2019 庆南昌原山学融合园eroomter入住选定
2019 昌原国家产业园区青年技术创业特性化项目入选
2019.09.12. ASEP 公司成立

- 技术开发现状

2019 “应急柴油发电机温度常态监测系统”
2020 “利用无线通信技术的应急柴油发电机实时监控系統”
2020 “LTE-AWS Cloud-based 应急发电机监控系统”
2021 “开发应用ICT-大数据基础自我调整功能（Self-Balancing）的Control Panal”

- 主页网址：www.asep.co.kr

- 产品咨询：河能喬 代表

○ 产品技术概要

- H/W 领域

- 1) 为缩小现有产品尺寸，利用CATIA 3D Modeling S/W修改设计
- 2) 通过ANSYS Workbench S/W解析CATIA 3D Modeling，结构稳定性及热效率
- 3) 以模型及解析结果为基础的外形加工
- 4) 利用e-SIM (embedded SIM) 可在不支持wifi的外部、地下等地实时监控

- S/W 领域

- 1) 对之前事业化当时验证的3个以上设备数据收集（每秒），对温度单一传感的部分，建立实时收集10个以上设备数据，以及对压力、电池充电与否及机身温动、振动的数据进行传感的电路
- 2) 不仅对发电机本身的数据，而且对周边环境（温度、湿度等）的传感器编程
- 3).构建将构建的设备数据保存到AWS云端后，通过监控程序确认的UX、UI（*构建对之前UI的固件升级及视觉便利的设计）



当前 S/W 屏幕屏幕截图

○ 主要功能

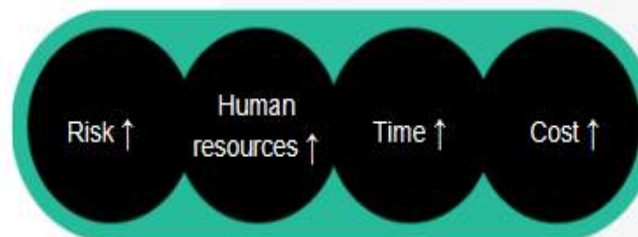
- 对全国零星安装和运营的应急发电机，安装设备后，利用智能传感器及无线通信技术，从安装的设备上，将发动机GCP Data和Generator Data，以及设备自控的震动、周边噪音、湿度等传输至中央DB。
- 中央DB接收的数据可通过PC进行管理，使用者也可通过UI进行直观确认，周期性REPORT和精密检查REPORT定期发送给用户和管理者，从而系统、高效地管理应急发电设备。

ASEP's differentiation.

Big Data - ICT-based diesel generator monitoring system ---6



Existing management method



- Noise environment of 120 dB or more (operated for at least 30 minutes during inspection)
- Incomplete combustion gas inhalation
- Environmental factors according to the characteristics of the basement



ASEP management method



- Efficiency of time and work environment
- Instant feedback on data changes
- Reduce transportation, time, and labor costs

Emergency Generator Monitoring System

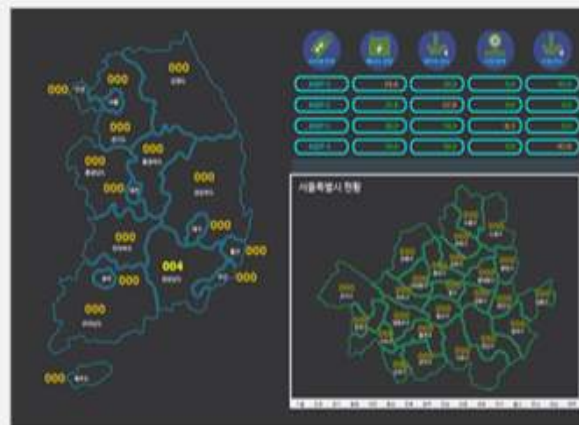
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Always data

Data that keeps the emergency generator **operating normally in an emergency**

Data collected during operation

Data such as power, voltage, and current detected **when the emergency generator is operated** in a disaster/emergency.



Technology certification status

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Transfer of patents/Secure of sales channels

- Emergency generator 10-2020-0024743 equipped with a failure prevention function using artificial intelligence algorithms
- Emergency Diesel Generator Remote Monitoring System 10-2020-0059962
- PCT International Patent//Emergency Diesel Generator Remote Monitoring System KR2020/009960
- Automatic Operation Control Team 10-2021-0098896 of diesel-type generators with artificial intelligence-based cognitive-control functions.

NEP Certified



S/W Test report



H/W Test report



KC Electromagnetic compatibility test.



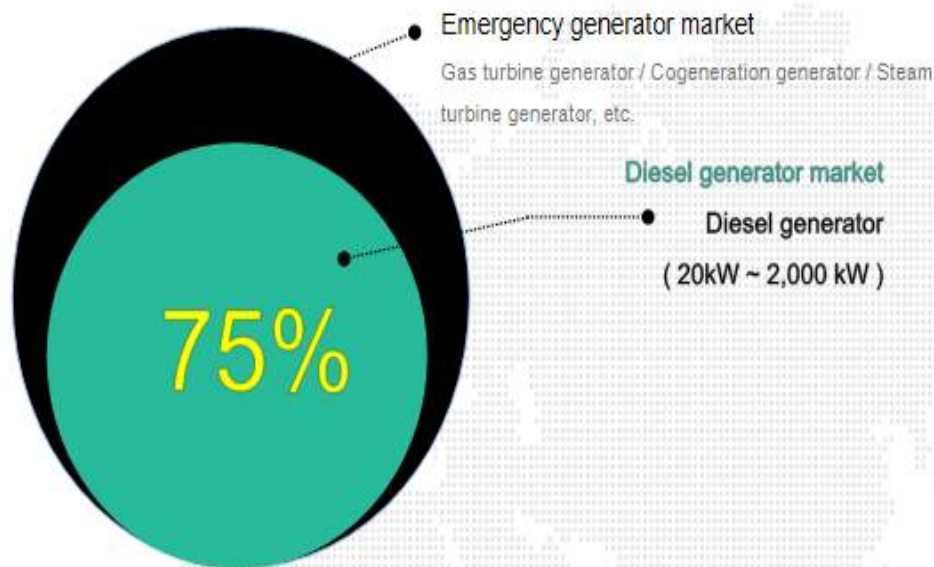
Program algorithm



Self-test report

Market trends

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Key target customers

- Manufacturer and sales agency
- A place where it's hard to manage facilities
- A place that requires continuous care
- Smart factory and other power facilities

Strategies for overseas expansion

- Provide related services in partnership with local Southeast Asian agency companies
- Exhibitions, overseas marketing, and discovery of affiliated companies
- Minimize the risk of occurrence by linking KOTRA's branching business
- Overseas Procurement Support Center/ UN Procurement Market, etc

구분	'19	'20	'21	'22	CAGR ('18~'22)
Domestic market	90,878	112,617	151,623	174,351	19%
Overseas market	7,239	7,525	7,742	7,981	3%

* Domestic/Overseas Market Calculation Formula: Applying IMF Global Economic Growth Estimate Based on 2020 Estimate (\$752.5 billion) * Source: Industrial Market Analysis by Korea Institute of Science and Information

* Reference data: Global Remote Power Generator Monitoring Market 2018~2022(www.researchandmarkets.com); IMF(2018.06), World Economic Outlook

BUSINESS MODEL

Long-term and stable revenue generation through regular reports and maintenance costs



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Model 1

Status information collection device product (Module)

ex) 1SET = 1,500,000won

Model 2

Real-time monitoring and reporting service

ex) 1unit (20,000won per month) → 40,000won per year

Model 3

Maintenance A/S revenue from failure diagnosis and prediction results

ex) Various filters, battery replacement, hydraulic system, and other paid repairs

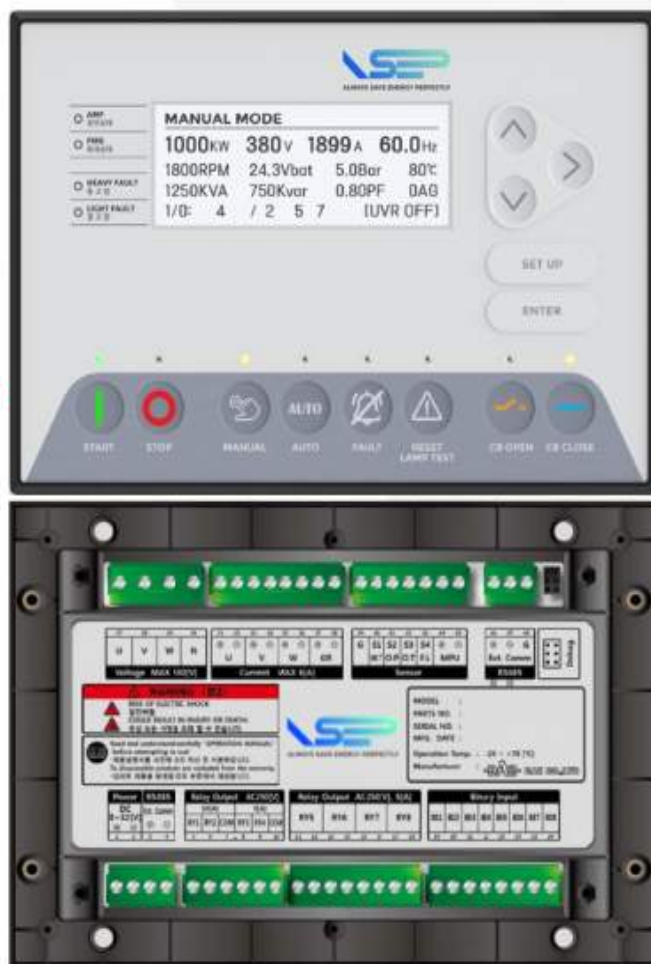
Big data-based self-awareness

Diesel generator operation board to which the control function is applied



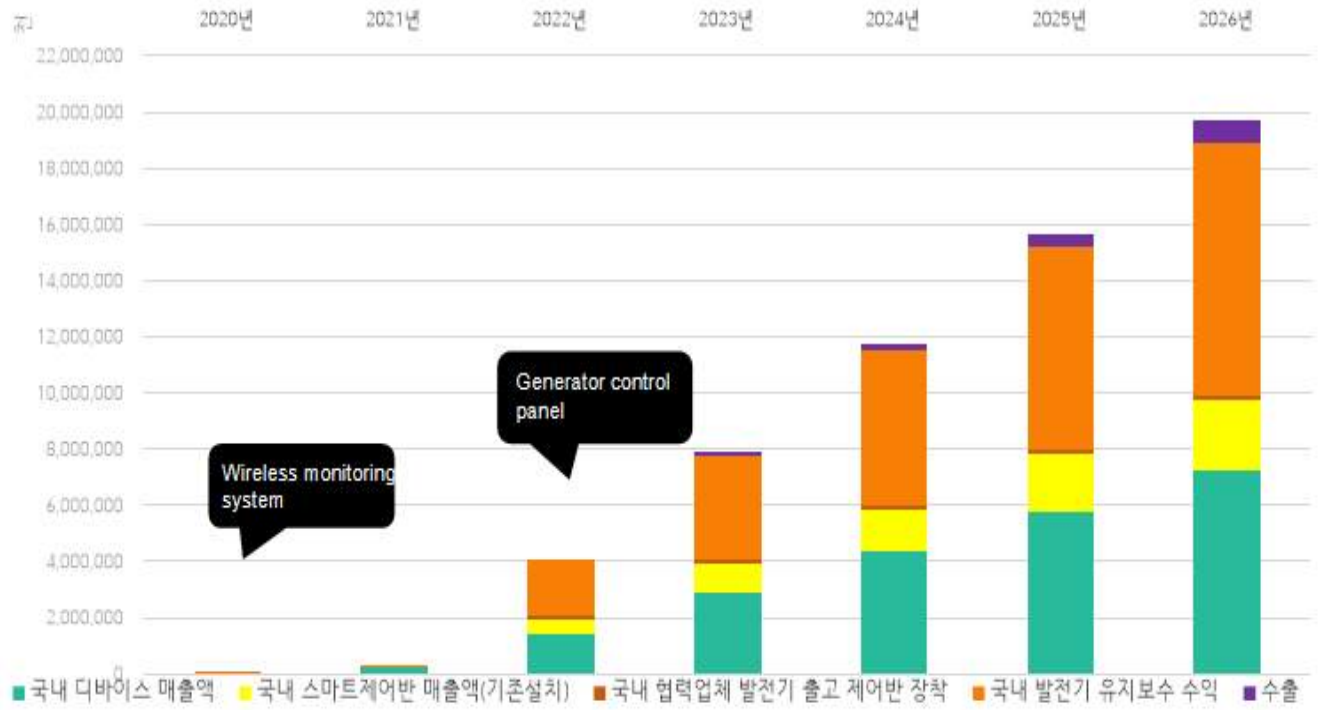
- Basic engine. Indicate detection data during power generation
- AUTO/ Manual Mode
- Protection circuit check/operation function
- Remote start function
- Three-phase voltage/current, other digital/analog signals
- Automatic voltage retention function (adjustment)
- Machine learning algorithm – optimal environment maintenance function
- RS-485 / LTE / Wifi Wireless communication function

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Strategy to enter the market

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Sortation	2020	2021	2022	2023	2024	2025	2026
Domestic device sales	40,000	240,000	1,445,000	2,890,000	4,335,000	5,780,000	7,225,000
Sales of Smart Control Panel in Korea (Existing installation)	0	0	510,000	1,020,000	1,530,000	2,040,000	2,550,000
It's equipped with the control panel for domestic suppliers' generators.	0	0	119,000	124,950	130,900	136,850	142,800
Maintenance revenue for domestic generators in Korea	20,120	30,000	2,000,000	3,754,000	5,508,000	7,262,000	9,016,000
Export	0	0	20,000	100,000	200,000	400,000	800,000
Sum	60,120	270,000	4,094,000	7,888,950	11,703,900	15,618,850	19,733,800

Investment review request

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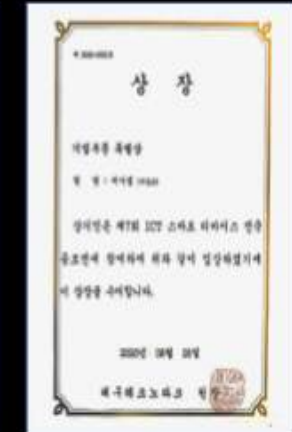


투자 검토 요청서			
1. 기업현황			
기업명	메이앤(ASEP)		
대표자 성명	하 능 교	생년월일	1995.12.09
개업연월일 (회사설립연월일)	2019.09.12	사업자구분	원래 개인 중소 법인 전환
전화번호	010-5207-1622	이메일	haneemhyun@gmail.com
주 소	경상남도 창원시 의창구 창원대학교로20 창업보육센터 제4창업실 (82319호)		
업 종	제조업	종업원 수	2 명
자 본 금	2022.01.1, 247	투자재원	개인 은행금
업 역	2021.04.30: 경상지자체예산연차 30대에 선정 2021.04.01: 창원창업사관학교 11기 입교 2021.03.10: 전기전자공학-감소특수 혁신기술사업 선정 2021.03.01: 창원대학교 창업보육센터 입주 2020.04.01: 창원창업사관학교 10기 입교 2019.09.12: 메이앤(ASEP) 설립		
매출액(원)	2020년 ₩27,203,000	2021년(실 기준) ₩6,532,000	
대표자 소개	창원대학교 일반대학원 기계공학부 전공 및 제과공학 석사과정 창원대학교 기계공학부 학사 (졸) 창원기계공업고등학교 (졸)		
기업 발굴 경로	창원문성대학교비 영호동 프로그램		



Overview

- 2021**
- 10th generation of KOSME acceptance
 - 2021 5 companies in Gyeongsangnam-do, G-Strong
 - 2021 Electrical Research Institute – Selection of Innopolis Project, Strong and Small Special Zone
 - IP Narae Gyeongnam Intellectual Property Center Selection
 - 2021 Data Voucher AI Algorithm R&D Selection
 - 2021 Gyeongnam-style accelerating selection
 - 2021 Gyeongsangnam-do Prototype Production Support Project Selection
 - 2021 Changwon University Industry-Academic Joint Technology Development Selection
 - 2021 Electrical Research Institute - Changwon Strong and Small Special Zone KERITOR 2nd Generation IR Demo Day Grand Prize winner
 - Selected as the 10th generation of the 2021 Korea Credit Guarantee Fund



- 2020**
- 2019 Information System Engineering Association Entrepreneurship and Entrepreneurship Competition Awarded
 - Winning the Excellence Award at the 2019 Youth IDEA-TECH Competition
 - The 7th ICT Smart Device Contest won the Special Award for Companies in Daegu
 - Winning the grand prize at the 1st Gyeongsangnam-do Youth Startup Idea Competition (Gyeongsangnam-do Governor's Award)
 - Korea Electric Power Corporation won the 2020 Creative Innovation Idea Contest
 - 10th generation of KOSME Overall score. "Excellent"



Our Team

CEO

Ha Neung Kyo

- School of Vibration Control Engineering branch(Master's degree) in Mechanical Engineering at Changwon University
- working as a test driver and A/S engineer for manufacturers specializing in emergency generators.
- KOSME 10th generation, outstanding graduation / Chairman of alumni association in Gyeongsangnam-do
- KOSME 11th Additional process / Chairman of 11th generation

Business support

Director

Jeong Eun jin

- Business administration major at Daegu Catholic University

R&D

Team leader



Kwak Tae Ju

- Graduate in electrical engineering at Changwon University.
- PCB circuit/part mounting design/development
- Manufacture of UV equipment with uniform distribution



Gu Ha Yun

- Mechanical Engineering at Changwon University
- Researcher in charge of ANSYS Workbench interpretation
- CATIA Tool 3D Instrument Design



Ju ye hyeon

- Mechanical Engineering at Changwon University
- Researcher in charge of ARMD/S/W interpretation



- 2020 June Developing a Wi-Fi model
- 2020 December Advanced LTE models
- 2021 June HDD DB > AWS Cloud DB
- 2021 October Pattern analysis and similar cluster identification Machine learning algorithm application
- 2022 February Self-Cognitive-Control Smart Generator Control Panel Development Completed
- 2022 June Smart Control Panel NET/NEP application





ALWAYS SAVE ENERGY PERFECTLY

SMART SAFETY SOCIETY