ITW GSE

7400 eGPU

Battery-powered Ground Power Unit
90 - 140 - 180 kVA

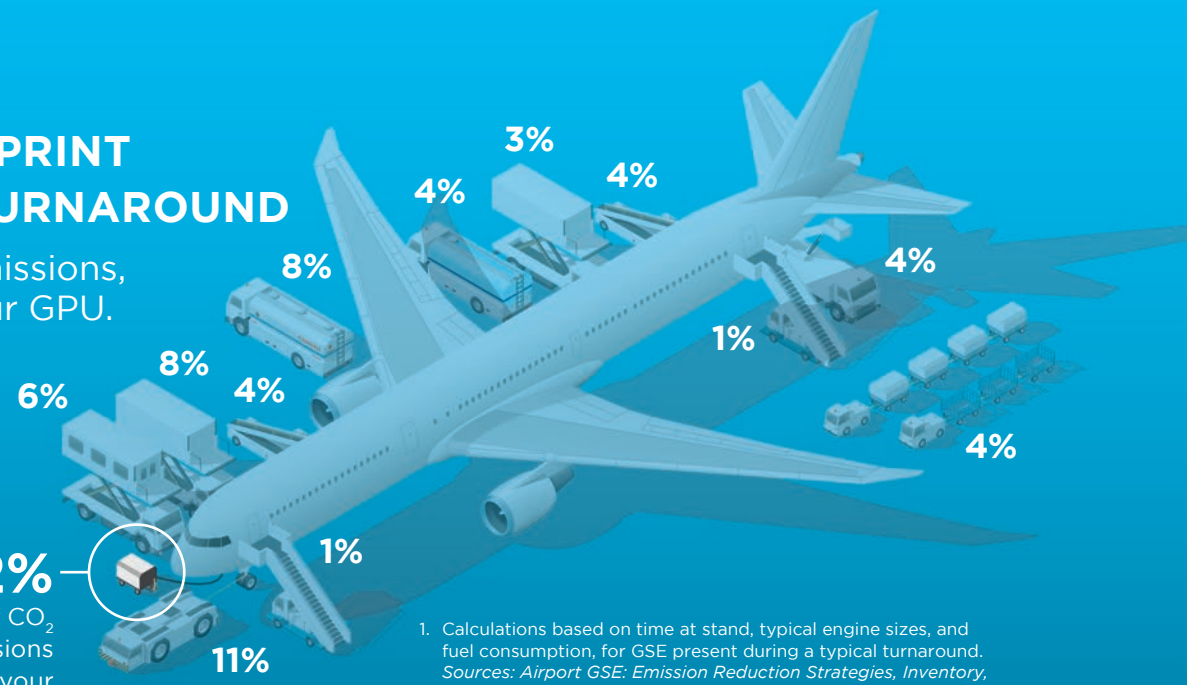
Available on a
Power by the Hour
subscription plan

Decarbonize while improving
workplace health and safety

It's all about connections

CO_2 FOOTPRINT DURING TURNAROUND

To reduce emissions, start with your GPU.



1. Calculations based on time at stand, typical engine sizes, and fuel consumption, for GSE present during a typical turnaround. *Sources: Airport GSE: Emission Reduction Strategies, Inventory, and Tutorial (2012). Aircraft ground handling: Analysis for automation (2017).*

THE WAY TO DECARBONIZE

Today, people around the world are accepting the need to reduce carbon emissions by transitioning to cleaner fuels. As a result, governments are estabilishing decarbonization policies and setting limits and timelines.

Meanwhile, in metropolitain areas, urban sprawl is bringing residents closer to airports that once were more distant, making emissions reduction a concern for local governements too.

In response, airports worldwide are racing to reduce emissions, and over half of all global passenger traffic now passes through Airport Carbon Accredited airports.

THE ANSWER IS BATTERY POWERED

To reduce emissions, airports are rapidly replacing diesel-powered equipment such as cargo loaders and pushback tractors with battery-powered ground support equipment. But 400 Hz ground power units are the biggest energy guzzlers of all, as they have to supply more energy over a longer time period.

This is why ITW GSE's battery-powered 7400 eGPU is such a game changer. It emits zero CO_2. In fact, replacing just one diesel GPU with a 7400 can save approx. 50,000 kgs (110,000 lbs.) of CO_2 per year, the equivalent of emissions from 45 households or 30 cars.[2]

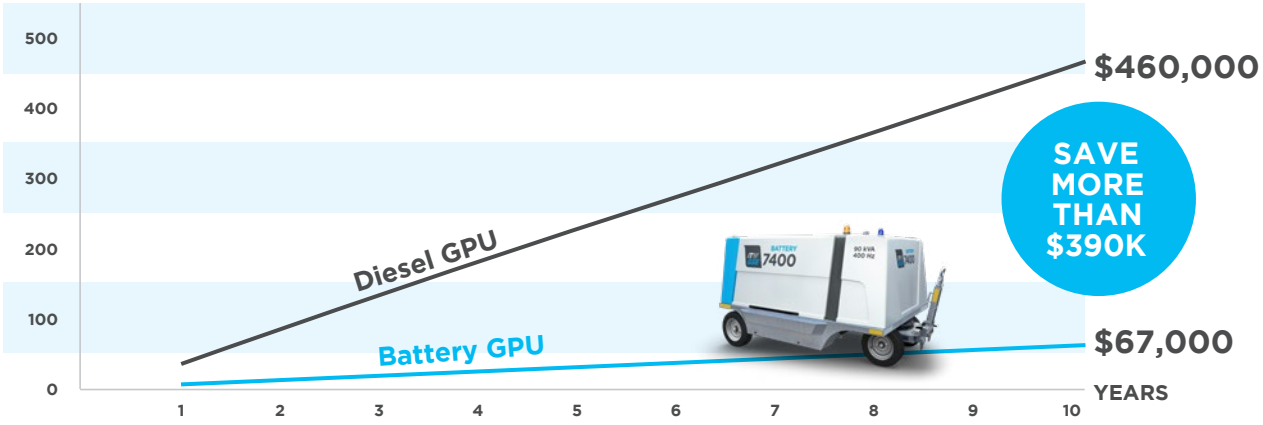
50,000 KG CO_2 = **45 HOUSE-HOLDS** or **30 AVG. CARS**

2. Figures based on an average estimate for a 90 kVA eGPU. Figures may vary depending on country.

CUT EMISSIONS AND SAVE

Think decarbonization is expensive? The 7400 eGPU eliminates direct CO_2 emissions while *also* reducing operating expenses. For example, a lack of moving parts, which are notoriously vulnerable to wear and tear, keeps maintenance costs virtually non-existent. Combined with low electricity costs, this makes the ITW GSE 7400 eGPU a clear winner in terms of emissions *and* OPEX.

SAMPLE CALCULATION – CUMULATIVE OPEX FOR DIESEL GPU VS eGPU



The graph shows the cumulative operating costs of a diesel GPU and a 90 kVA eGPU used 5.5 hours per day. Lower electricity and maintenance costs make the eGPU the winner in terms of overall operating expenses. Total Cost of Ownership (TCO) is lower than diesel after 2 years on average. For a customized calculation of your own savings, talk to your ITW GSE representative.

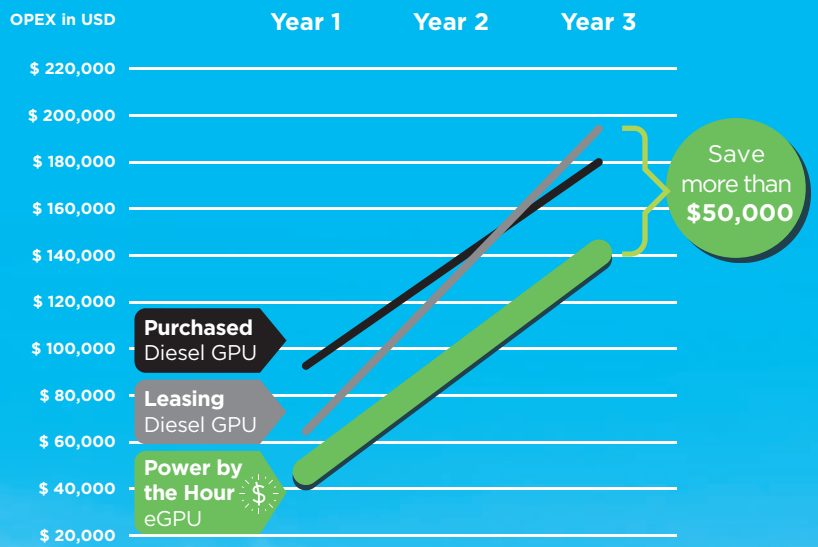
POWER BY THE HOUR

Calculate your savings here:

An eGPU on a Power by the Hour subscription costs approx. $48,000 a year. By comparison, leasing a diesel GPU on a 6-hour/day basis means an OPEX of $65,000 a year.

Choosing an eGPU can thus reduce your OPEX by more than $50,000 over three years – per 90 kVA eGPU. Note that six hours a day is a modest figure compared to average use in the industry. The more hours your eGPUs run, the more you save.

Furthermore, our calculations do not consider any GPU you may have on reserve to ensure resilient operations. Even if you normally buy your GPUs, you come out on top when you choose a Power by the Hour subscription instead.



Above calcuation is based on average EU prices.

IMPROVE YOUR WORKPLACE HEALTH AND SAFETY

NO DIRECT NO_X OR CO_2 EMISSIONS AND VIRTUALLY SILENT OPERATION

In addition to emitting considerable CO_2, diesel GPUs emit significant NO_X, which is well known to have harmful effects on human health. The ITW GSE 7400 eGPU emits no NO_X into its operating environment, meaning a cleaner and safer workplace environment for your operators.

Another advantage with the 7400 is that is virtually silent, reducing noise levels at the gate, in the hangar, or wherever you deploy your eGPU. Combined, zero local emissions and near-silent operation make the 7400 not just a means of decarbonization, but also a way to improve occupational health and safety.

Noise level:
eGPU vs diesel at 1 meter

eGPU

Diesel engine

Average dBs (dB)	0	25	60 - 65	75	85	107	120	140
		Whisper	Normal conversation	Vacuum Cleaner	City Traffic	Power mower	Pneumatic chipper	Jet engine at 100'

Sounds above 85 dB are harmful

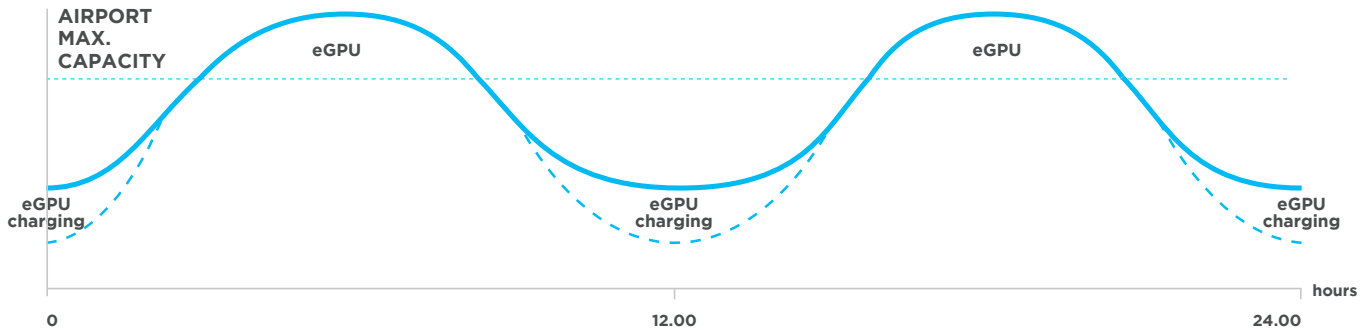
Source: https://ehs.yale.edu/sites/default/files/files/decibel-level-chart.pdf

MAKE MORE OF EXISTING INFRASTRUCTURE

POWER WHEN YOU NEED IT

Airports frequently experience peak load periods with a consumption level very close to the power grid's maximum capacity. Increasing the grid capacity requires huge investments in infrastructure.

Making eGPUs a part of your airport's electrical infrastructure allows you to even out your capacity demands over a 24-hour period. Your eGPUs can be charged during quiet periods and then add overall capacity during peaks.



eGPUs CAN MITIGATE OR ELIMINATE THE NEED FOR EXPENSIVE UPGRADES OF AIRPORT INFRASTRUCTURE.

EASY TO DEPLOY AND OPERATE

Use in hangars – no input power cables

Supply power and recharge at the same time

Mobile GPU and line-powered converter in one unit

Onboard charging system

BC

Recharge from any 50/60Hz socket

FLEXIBLE CHARGING

The 7400 eGPU has already changed how airports think about compromise-free ground power supply. It gives you full flexibility thanks to its onboard battery, and it delivers the same proven features as other ITW GSE solid-state GPUs. Combine it with an ITW GSE Power Share, and you won't even have to think about charging capacity.

Most gates are designed to generate more power than required. The separate Power Share box ensures that excess power from the grid can be distributed efficiently to your eGPU or other units both during and between turn-arounds – with no need to upgrade gate infrastructure.

INTUITIVE OPERATION

The backbone of all ITW GSE design is our common design platform, which offers significant advantages.

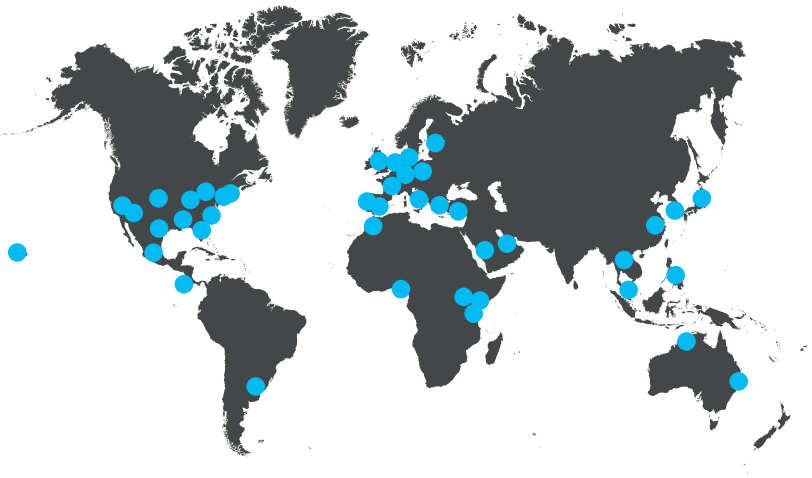
Like all ITW GSE products, the 7400 eGPU features a common icon-based user interface that is as easy to use as a smartphone. This means airport operators already familiar with one ITW GSE product can easily operate another, reducing the risk of human error during operation and facilitating product training.

Modular design is the hallmark of ITW GSE. The 7400 eGPU is built from modular components. This ensures fast replacement, servicing and spares commonality.

JOIN THE eGPU COMMUNITY

Since introducing the first-ever eGPU to the market in 2017, ITW GSE has supplied eGPUs to customers all around the world. With the complete range of eGPUs powering everything from business jets to wide-body aircraft, the 7400 eGPU is popular with airports, airlines, ground handlers, and service providers.

The 7400 is designed for civil aviation. Yet since it is also ideal for use in hangars, it can enable armed forces to show environmental commitment without compromising operations.



eGPUs FOR ALL POWER NEEDS

The ITW GSE 7400 eGPU family covers all your power needs, from jets requiring 28 VDC to larger narrow-body and wide-body aircraft. Ideal for hangars, military and defense applications, and remote stands with no fixed 400 Hz installations.

TO FIND OUT MORE, CONTACT YOUR ITW GSE SALES REPRESENTATIVE OR VISIT ITWGSE.COM

SPECIFICATIONS

ITW GSE 7400 eGPU - 90 - 140 - 180 kVA

ITW GSE 7400 eGPU ISO 6858: 2017(E) IN COMPLIANCE WITH

Input

- Charger input range:
  3 phased @ 260–520 V / 45–65 Hz

Charging Time (based on charging only):

		Battery (160 kWh)	Battery (310 kWh)
Wall Outlet	16 A	< 15 h	N/A
	32 A	< 8 h	< 20 h
	63 A	< 4 h	< 10 h
	125 A	< 3 h	< 5 h
	200 A	N/A	< 4 h

Values based on 3 x 400 V and 20°C ambient

Output

- Rated power: 90 kVA; 140 kVA; 180 kVA Unity Power Factor
- Voltage: 3 x 115/200 V
- Frequency: 400 Hz ± 0.1%
- Power factor: 0.7 lagging to 0.95 leading
- Voltage regulation:
  <0.5% for balanced loads and
  up to 30% for unbalanced loads
- Voltage recovery: Δ<8% and recovery time<10 ms to 100% load change
- Total harmonic content:
  <2% at linear load (typically 1.5%)
  <2% at non-linear load according to ISO 1540
- Crest factor: 1.414 ± 3%
- Voltage modulation: <1.0%
- Phase angle symmetry:
  120° ± 1° for balanced loads
  120° ± 2° for 30% unbalanced loads

Protection

- Protection class: IP55
- No break power transfer
- Over/under voltage at output
- Overload
- Internal high temperature
- Control voltage error
- Short circuit at output
- Plug insertion interlock
- Neutral voltage supervision
- Neutral voltage displacement
- Leakage current supervision

Miscellaneous

- MTTR: max. 20 minutes
- Color: RAL 7035, Light grey (standard)
  Rear cover: RAL 5015, Sky Blue

Turnarounds as Function of Time and Aircraft

Based on average measured consumption. Subject to aircraft configuration.		Time at gate in minutes		
		40	60	80
1x 90 kVA Unit	CRJ-900LR	16	11	8
	A320-200	15	10	9
	A321-200	8	5	4
	B737-800	10	6	5
2 x 90 kVA Units or 1 x 180 kVA Unit	A340		6	5
	A350		5	4
	B777-200		6	5

Depending on ambient conditions and usage, the capacity can be expected to derate up to 30% over 10 years

Norms and Standards

- ISO 6858:2017 Aircraft Ground Support Electrical Supplies
- MIL-STD-704F* Aircraft Electric Power Characteristics
- SAE ARP 5015* Ground Equipment – 400 Hertz Ground Power Performance Requirements
- DFS400* Specification for 400 Hz Aircraft Power
- EN 62619:2017 Safety Requirements for Li-Ion Batteries
- UN38.3 Certified Battery System
- EN 1915-1 & 2 Machinery; general safety requirements
- EN 12312-20 Machinery; general safety requirements
- EN 62040-1-1 General & Safety Requirement
- EN 61558-2-6 General & Safety Requirement
- EN 61000-6-4 Electromagnetic Compatibility Generic Standards – Emission Standard
- EN 61000-6-2 Generic EMC Standards

**Standard partly fulfilled. Contact ITW GSE for more information*

Weight up to

- 90 kVA (160 kWh): 2,510 kg/5,533lbs*
- 140 kVA (248 kWh): 3,724 kg/8210 lbs*
- 180 kVA (310 kVh): 4,244 kg/9,357 lbs*

**without any cables/options*

Environmental

- Optimal operating temperature:
  -40°C to 50°C (-40°F to 122°F)
- Optimal performance:
  -10°C to 45°C (14°F to 113°F) -
  Heating or cooling may be required to maintain optimal performance.
  Relative humidity 10-100%
- Noise level: <65 dB(A)@1m
  – typically 60 dB(A)

Efficiency

- 400 Hz converter and charger part > 0.95

Overload Ratings

- As per ISO 6858:2017

Standard Features/Equipment:

- Plug & Play automatic voltage compensation (with one output active only)
- Adjustable max. input current settings
  90 kVA: 16 to 125 A in steps of 1 A
  140-180 kVA: 16 to 200 A in steps of 1 A
- Towbar interlock (non-lock version)
- Simultaneous charging while supplying 400 Hz power
- Beacon for operation/charging*
- Beacon for warning/low battery* incl. siren

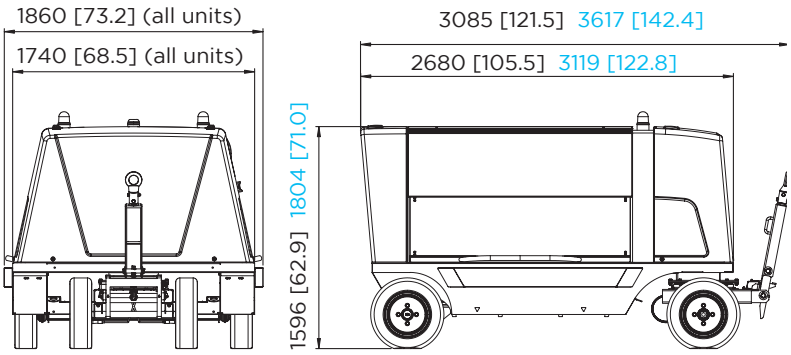
**Color acc. to customer specification*

Standard Options Available

- Dual output: optional for 90 kVA
  Standard on 180 kVA
- Input cable and plug according to clients specifications
- 4 x 50 mm2 output cable (AWG 1/0) (recommended)
- Lockable towbar interlock
- Interchangeable towing eye
- White clearance light
- ITW GSE Connect (data/location via GSM/GPS)

Below Options are for 90 kVA only

- 28 VDC / 600 A ARU (Automatic Rectifier Unit) Simultaneous usage 45 kW(AC)
- Ability to power the 7400 from another GPU in case of unexpectedly long turnaround time
- Forklift pocket for transportation
- AC Type 2 charging inlet
- CCS2 & AC Type 2 charging inlet



Dimensions are shown in mm and [inches]. Drawing shows 90 kVA. Numbers in blue are 180 kVA eGPUs.

CALIFORNIA ENERGY COMMISSION COMPLIANT BC

CE

Specifications are subject to change without prior notice

It's all about connections

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November 2024: M12692, Rev. K