

TRANSFRIGORROUTE-/ VDA-Fachveranstaltung



Kühltransporte:

„Vernetzt, gekühlt, geliefert“

Mittwoch, den 16. September 2026

IAA Transportation, Messe Hannover, Convention Center (CC), Saal 1B



#ichfahrfürdich

TRANSFRIGORROUTE- „Competence Center für Thermo- & Lebensmittellogistik“ im



PV auf dem Reefer-Dach: Ihr Beitrag zur Elektrifizierung von Kühltrailern

nice gimmick or true contributor?



Referent: Pavel Gilman

NIVALIS global footprint

USA



Nivalis Energy Systems LLC

- Registered Office (Hunt Valley – MD)
- R&D Center (Dexter – MI)
- Battery and System Assembly Line (Dexter – MI)



Italy



Nivalis Energy Italy S.r.l.

- R&D Center
- Battery and System Assembly Line
- Telematics

Germany & Luxembourg



Nivalis Energy Europe Holding SARL

Nivalis Energy Germany GmbH & Co. KG.

- R&D Center - functional safety & Cybersecurity (Nürnberg)
- CC E-Propulsion (Schweinfurt)

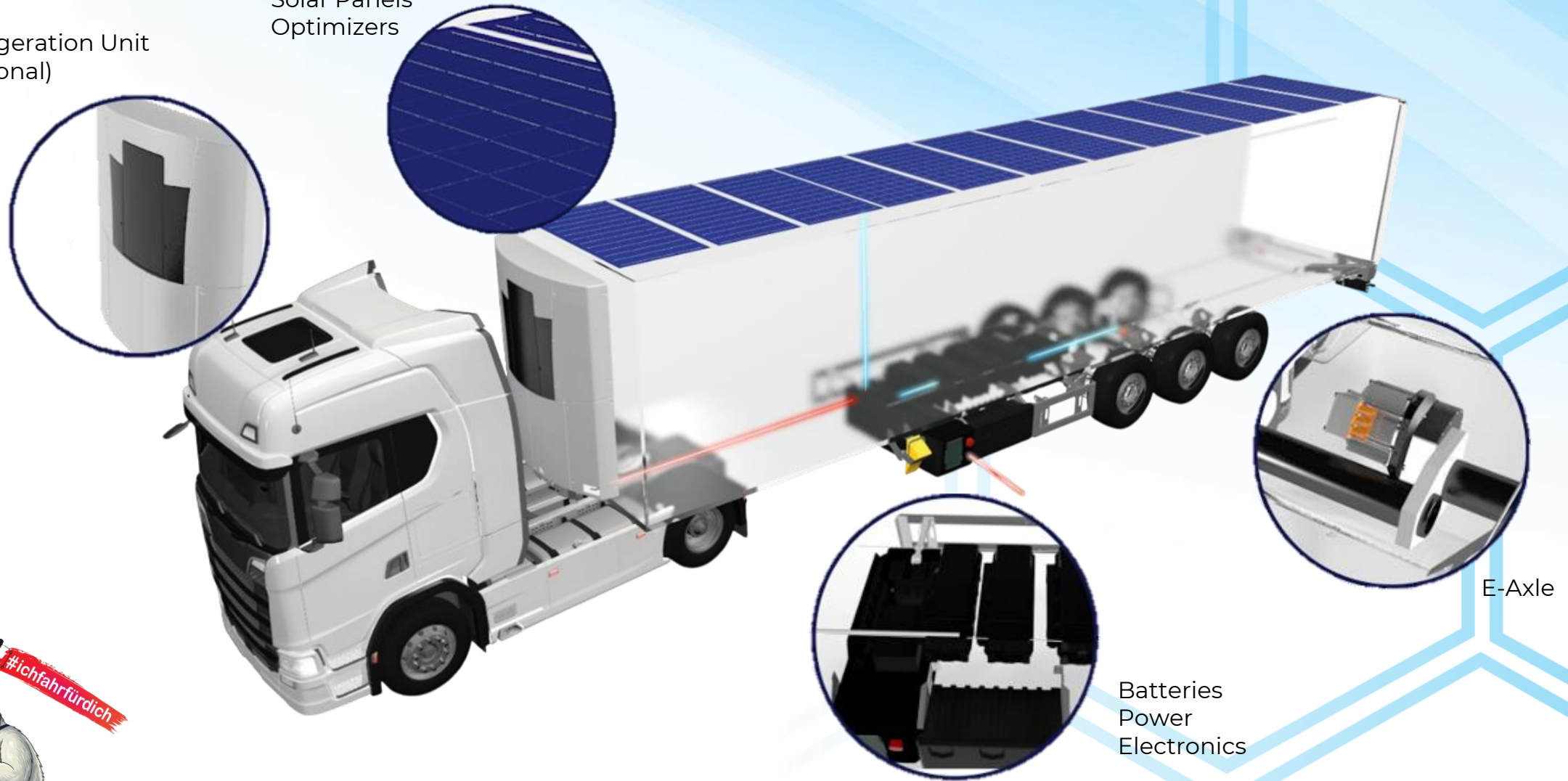
NIVALIS ENERGY EUROPE site in Italy



System Overview – Powered Trailer e-Reefer

Refrigeration Unit
(optional)

Solar Panels
Optimizers

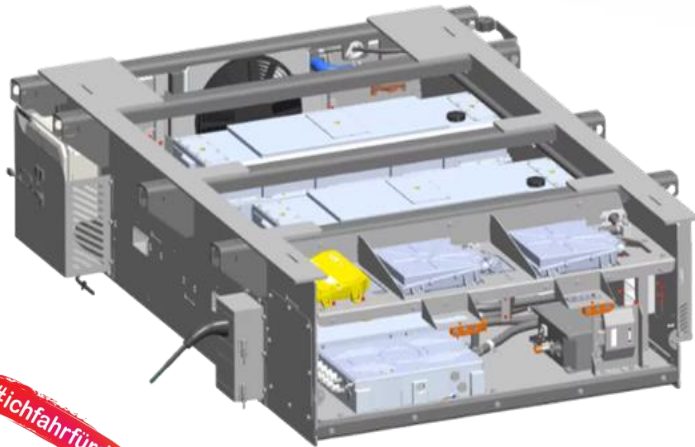


Batteries
Power
Electronics

E-Axle



Powered Trailer (e-Reefer) Components



Battery Packs & Power Electronics



E-Axle Recuperation



Solar Panels

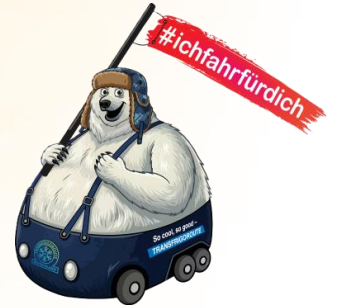


Obwohl PV-System von uns als optional zum Batterie-System angeboten wird, haben sich bisher alle unsere Kunden dafür entschieden.

➤ PV-System hat das beste ROI.

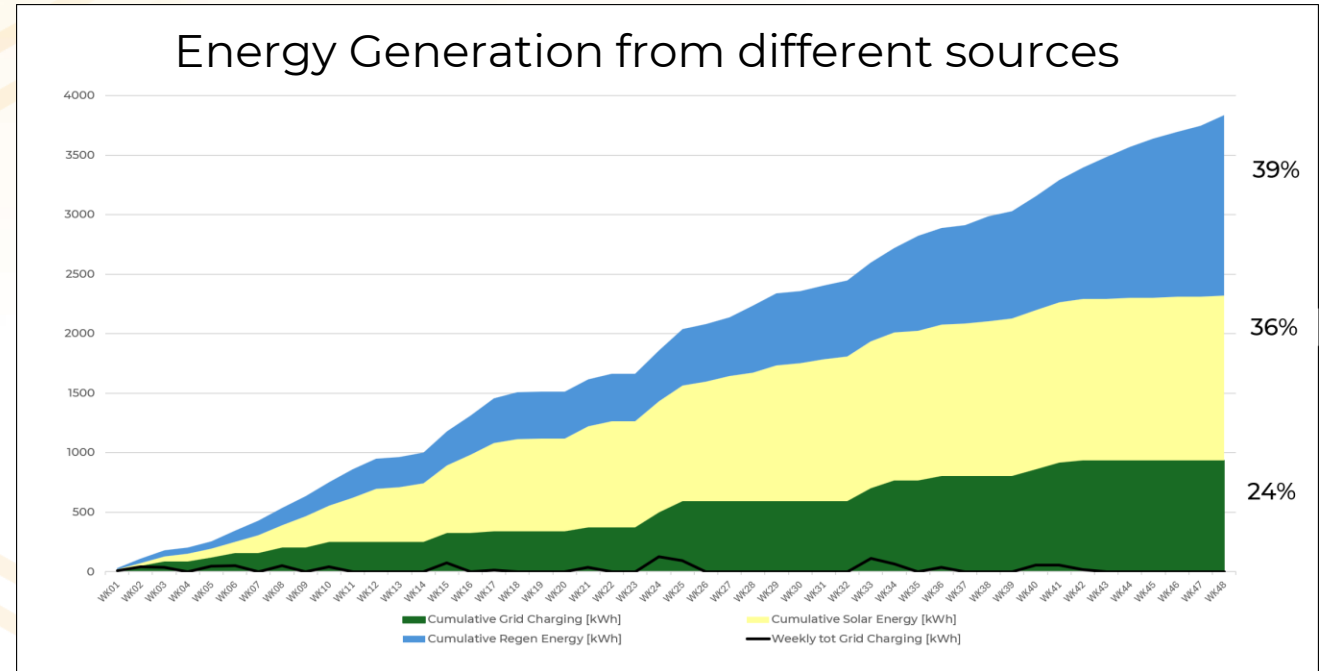


Field Performance in North Germany



- Data from January to December
- Installed PV power 3 kWp
- 1.4 MWh solar energy represents 36% of TRU consumption

calendar week n°	test week n°	cumulative Cumulative Solar Energy [kWh]	cumulative Cumulative Regen Energy [kWh]	weekly Weekly tot Grid Charging [kWh]	cumulative Cumulative Grid Charging [kWh]	Trend Green Energy rate
W 4	WK01	12	10	7	7	
W 5	WK02	27	35	40	47	57%
W 6	WK03	42	53	39	86	52%
W 7	WK04	66	53	0	86	58%
W 8	WK05	76	59	45	120	53%
W 9	WK06	95	92	50	157	54%
W 10	WK07	149	122	0	157	63%
W 11	WK08	188	144	50	205	62%
W 12	WK09	262	170	1	205	68%
W 13	WK10	306	197	43	249	67%
W 14	WK11	375	237	0	249	71%
W 15	WK12	447	253	0	249	74%
W 16	WK13	464	253	0	249	74%
W 17	WK14	496	258	0	249	75%
W 18	WK15	569	287	76	324	73%
W 19	WK16	656	332	0	324	75%
W 20	WK17	742	375	15	339	77%
W 21	WK18	773	396	0	339	78%
W 22	WK19	777	397	0	339	78%
W 23	WK20	777	397	0	339	78%
W 24	WK21	848	397	35	374	77%
W 25	WK22	889	400	0	374	78%
W 26	WK23	891	400	0	374	78%
W 27	WK24	934	424	127	501	73%
W 28	WK25	971	474	91	592	71%
W 29	WK26	1008	480	0	592	72%
W 30	WK27	1051	496	0	592	72%
W 31	WK28	1081	564	0	592	74%
W 32	WK29	1143	604	0	592	75%
W 33	WK30	1158	609	0	592	75%
W 34	WK31	1192	624	0	592	75%
W 35	WK32	1219	635	0	592	76%
W 36	WK33	1233	664	111	702	73%
W 37	WK34	1244	705	65	768	72%
W 38	WK35	1257	800	0	768	73%
W 39	WK36	1271	812	38	805	72%
W 40	WK37	1282	827	0	805	72%
W 41	WK38	1299	883	0	805	73%
W 42	WK39	1324	902	0	805	73%
W 43	WK40	1337	959	56	861	73%
W 44	WK41	1348	1029	56	916	72%
W 45	WK42	1356	1104	19	935	72%
W 46	WK43	1359	1192	0	935	73%
W 47	WK44	1366	1267	0	935	74%
W 48	WK45	1368	1338	0	935	74%
W 49	WK46	1373	1385	0	935	75%
W 50	WK47	1377	1436	0	935	75%
W 51	WK48	1385	1514	0	935	76%
Energy source share of total		36%	39%		24%	

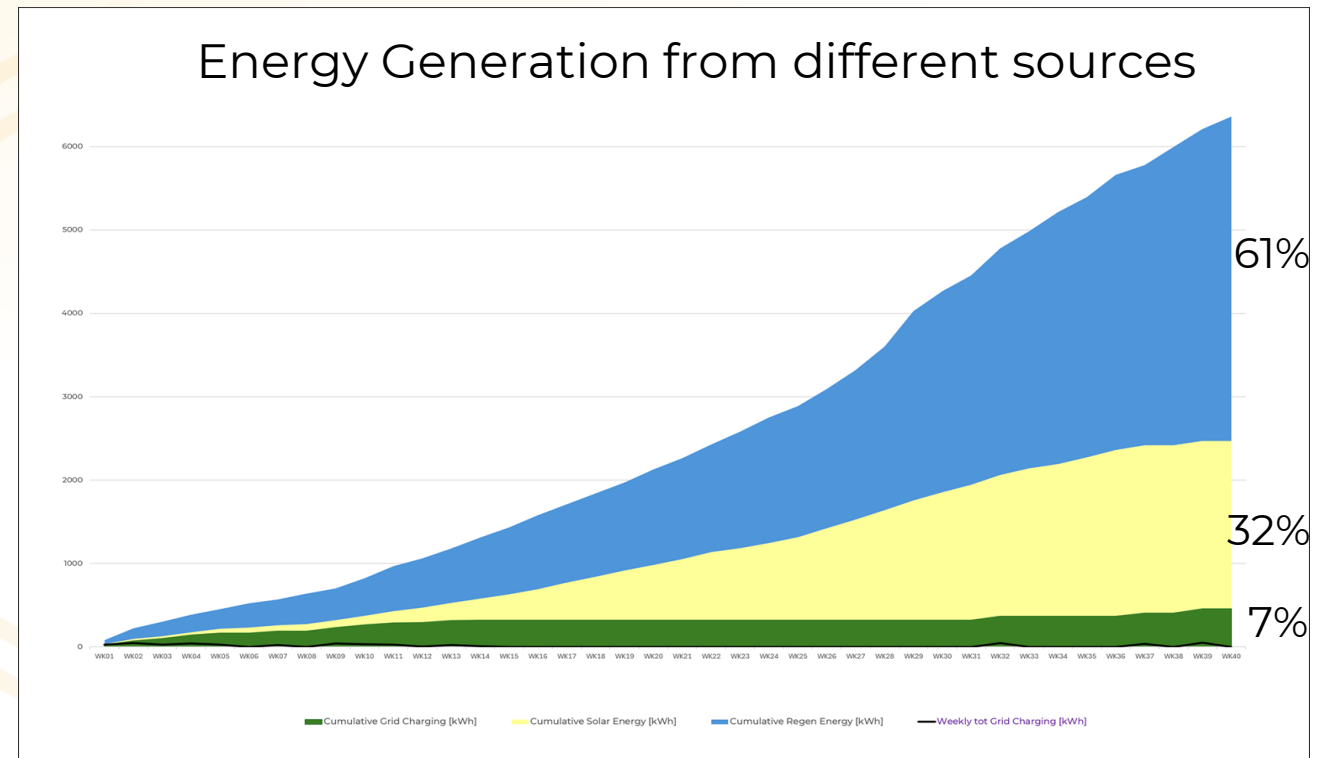


Field Performance in North Italy



test week n°	cumulative Cumulative Solar Energy [kWh]	cumulative Cumulative Regen Energy [kWh]	weekly Weekly tot Grid Charging [kWh]	cumulative Cumulative Grid Charging [kWh]	Trend Green Energy rate
WK01	7	48	28	28	66%
WK02	22	126	47	75	66%
WK03	26	174	29	104	66%
WK04	31	212	41	145	63%
WK05	44	235	27	172	62%
WK06	59	291	0	172	67%
WK07	64	311	24	196	66%
WK08	79	363	0	196	69%
WK09	86	378	40	235	66%
WK10	107	450	32	267	68%
WK11	134	540	26	293	70%
WK12	173	593	6	298	72%
WK13	206	652	21	319	73%
WK14	252	731	7	327	75%
WK15	303	802	0	327	77%
WK16	366	885	0	327	79%
WK17	444	939	0	327	81%
WK18	517	998	0	327	82%
WK19	590	1056	0	327	83%
WK20	657	1144	0	327	85%
WK21	728	1210	0	327	86%
WK22	811	1293	0	327	87%
WK23	858	1396	0	327	87%
WK24	920	1504	0	327	88%
WK25	989	1572	0	327	89%
WK26	1097	1669	0	327	89%
WK27	1199	1795	0	327	90%
WK28	1313	1959	0	327	91%
WK29	1428	2274	0	327	92%
WK30	1529	2409	0	327	92%
WK31	1617	2510	0	327	93%
WK32	1687	2718	47	374	92%
WK33	1765	2846	0	374	92%
WK34	1820	3020	0	374	93%
WK35	1898	3121	0	374	93%
WK36	1986	3301	0	374	93%
WK37	2007	3359	37	411	93%
WK38	2007	3575	0	411	93%
WK39	2007	3739	51	462	93%
WK40	2007	3890	0	462	93%
Energy	32%	61%		7%	

- Data from December to August
- Installed PV power 3.6 kWp
- 2 MWh solar energy represents 32% of TRU consumption



FAZIT

PV-System auf dem Aufliegerdach produziert zwischen 1,5 MWh (im Norden) und 3 MWh (im Süden) elektrischer Energie p.a., was einer Einsparung zwischen 1000 und 2000 Liter Diesel entspricht.

ROI des PV-Systems als, Zusatzfeature zum Batteriesystem, liegt damit bei rund 2 Jahren.

Insbesondere bei Standzeiten, trägt das PV-System dazu bei, den Energiebedarf des Kühlaggregats zu decken und betriebliche Prozesse unverändert zu lassen.



Wenn Sie mehr erfahren wollen...

Stand E50 in der Halle 27 (*e-Reefer & e-Trailer*)

Open-Air Area T25 (*drawbar trailer EMMI & Mitsubishi*)

Wir freuen uns auf Sie

Vielen Dank für Ihre Aufmerksamkeit

