



# Zeeland small wind turbine testfield

Summary results from test period  
1 April 2008 - 31 March 2009

Manufacturer	Ropatec	Southwest	Zephyr	Renewable Devices	Raum Energy	Ropatec	Energy Ball	Fortis	Turby	Ampair	Windwalker
Model	WRE 060	Skystream	Airdolphin	Swift	Raum 1.3	WRE 030	Energy Ball	Passaat	Montana	Turby	Ampair 600
Price	€ 39,162.00	€ 10,742.03	€ 17,548.00	€ 13,208.00		€ 30,862.00	€ 4,324.00	€ 9,239.16	€ 18,508.07	€ 21,350.00	€ 8,925.00

## Test results

	Production in kWh										
Apr-08	48	175	42	22	6	56	265	6	1	0	0
May-08	41	171	29	12	4	39	207	27	7	0	0
Jun-08	25	106	17	7	2	33	169	19	19	0	0
Jul-08	29	118	19	8	3	33	170	19	18	0	0
Aug-08	39	143	24	12	4	42	200	22	21	0	0
Sep-08	32	133	21	6	2	31	155	13	16	0	0
Oct-08	0	151	28	17	4	45	199	20	18	0	0
Nov-08	53	260	49	44	8	75	311	34	31	0	0
Dec-08	44	196	38	20	4	47	229	36	26	0	0
Jan-09	69	240	44	42	7	62	256	6	27	0	0
Feb-09	42	163	31	removed	4	40	196	0	21	0	0
Mar-09	64	254	50	removed	11	74	335	44	39	0	0
Apr-Mar	486	2110	392	190	59	577	2692	246	244	0	0

## Test results

	Consumption in kWh										
Apr-Mar	7	24	63	66	0	0	4	115	15	79	0

## Test results

	Net production minus consumption in kWh										
Apr-Mar	479	2086	329	124	389	577	2688	131	229	-79	0

## Indicative average windspeed and direction

Month	Windspeed in m/s	Wind direction in deg
Apr-08	3.5	184
May-08	3.7	109
Jun-08	3.4	230
Jul-08	3.4	210
Aug-08	3.6	214
Sep-08	3.4	187
Oct-08	3.2	194
Nov-08	4.4	186
Dec-08	3.7	172
Jan-09	4.4	148
Feb-09	3.4	214
Mar-09	4.4	231
Average	3.6	186

The price given is inclusive of tax and is for a complete package including erection, generator, mast, foundation, inverter, cabling, and installation.

The wind direction is given in degrees where North is 0, East is 90, South is 180, and West is 270.

The wind direction and windspeed are only indicative data that are not officially certified.

This data has been translated from the Zeeland Windtest original which is in Dutch, by David Sharman of Ampair.

The original kWh data has concealed decimal point data for the kWh and so there are slight discrepancies.

The Swift was removed on 31 Jan 2009 for the Raum 1.3

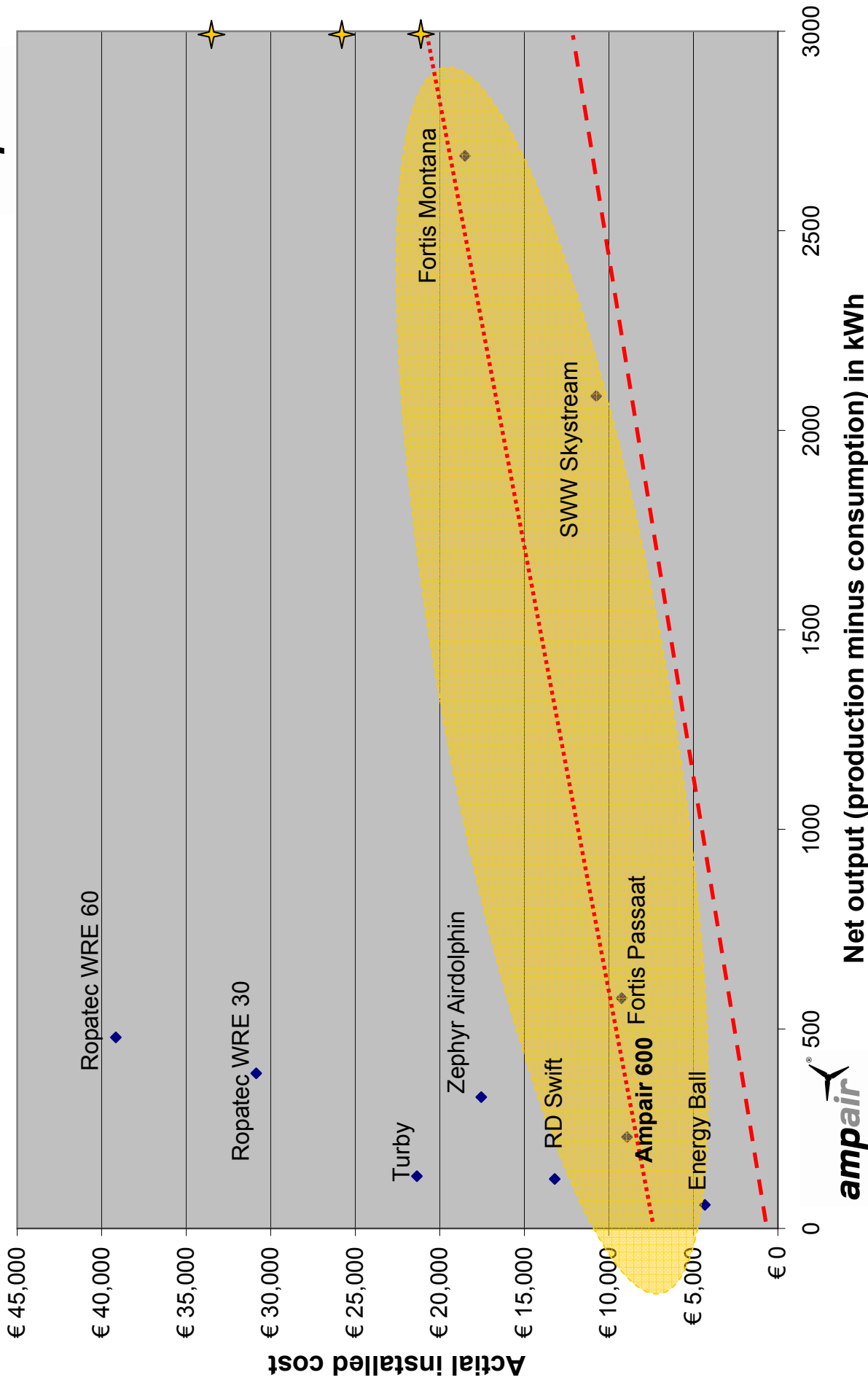
The Raum will be completely installed in the middle of April 2009.

The Turby has had a fault during all of February 2009.

The Windwalker was installed in January 2008 but has not operated.

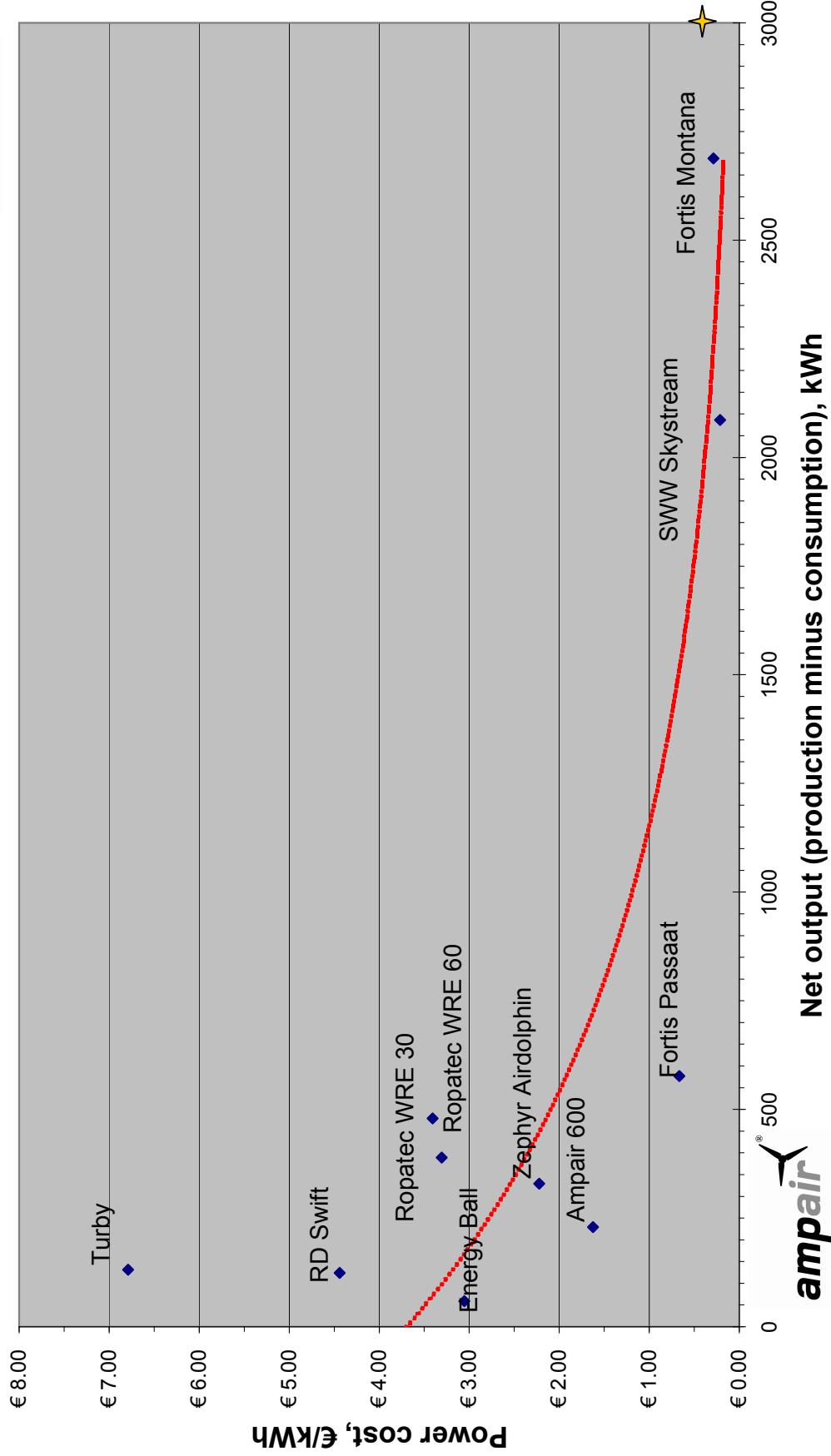


### Cost effectiveness per Zeeland results - production vs total cost



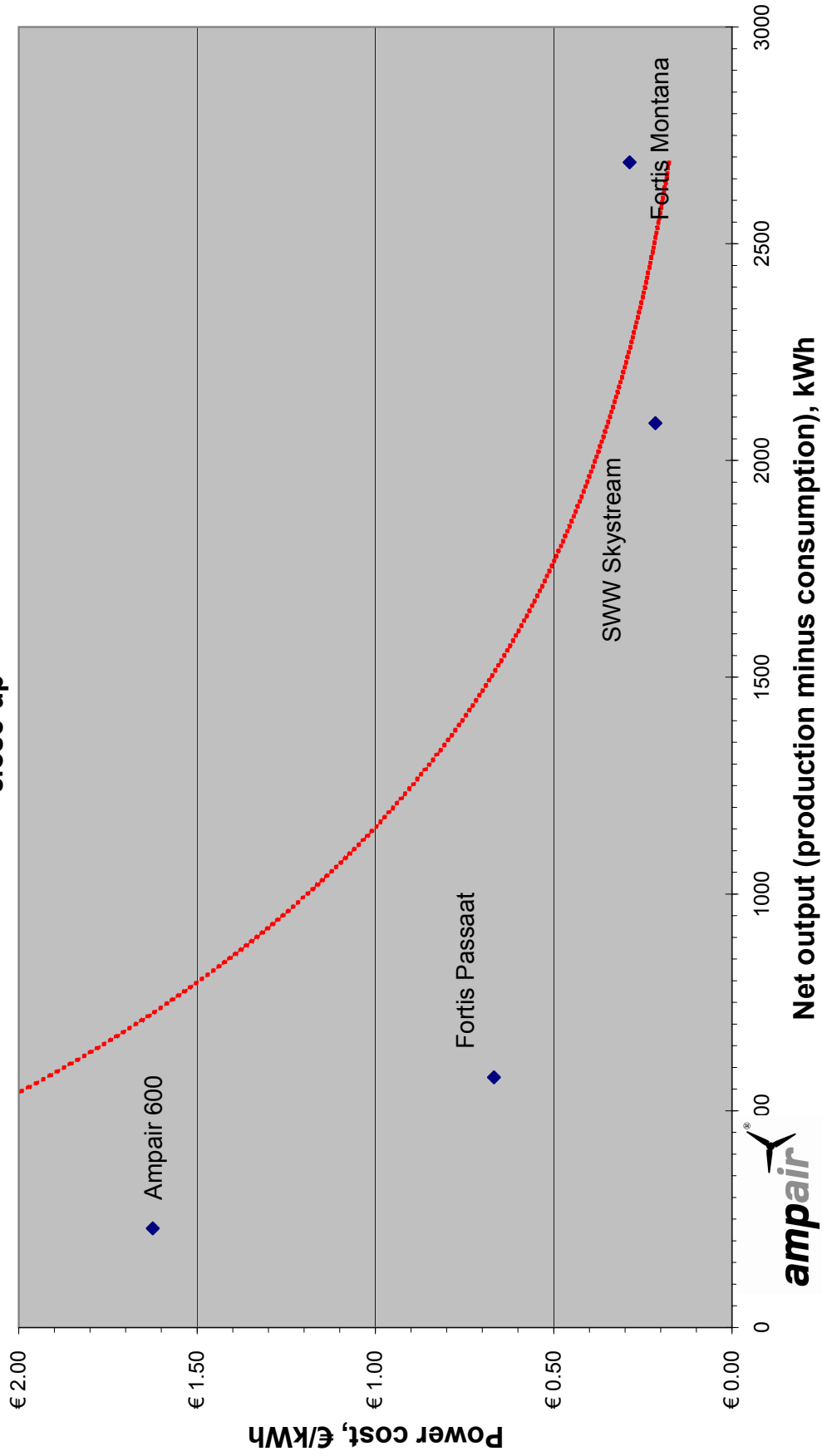


### Cost effectiveness per Zeeland results - production vs power cost





### Cost effectiveness per Zeeland results - production vs power cost close-up





### Efficiency comparison (kWh/yr/m2)

