

1 Sensitivitätsanalyse - Wind/Solar-Verhältnis und Speicher

2 Hans-Heinrich Schmidt-Kanefendt, 18.11.2015

3

4 Langzeitstromspeicherung mit Wasserstoff - Wirkung des Anteilsverhältnisses von Windstrom zu Solarstrom auf die erforderliche Speicherkapazität und die zu installierende Elektrolyseleistung, ermittelt durch Variation des Szenarios 'Niedersachsen 100 % EE' (150826).

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

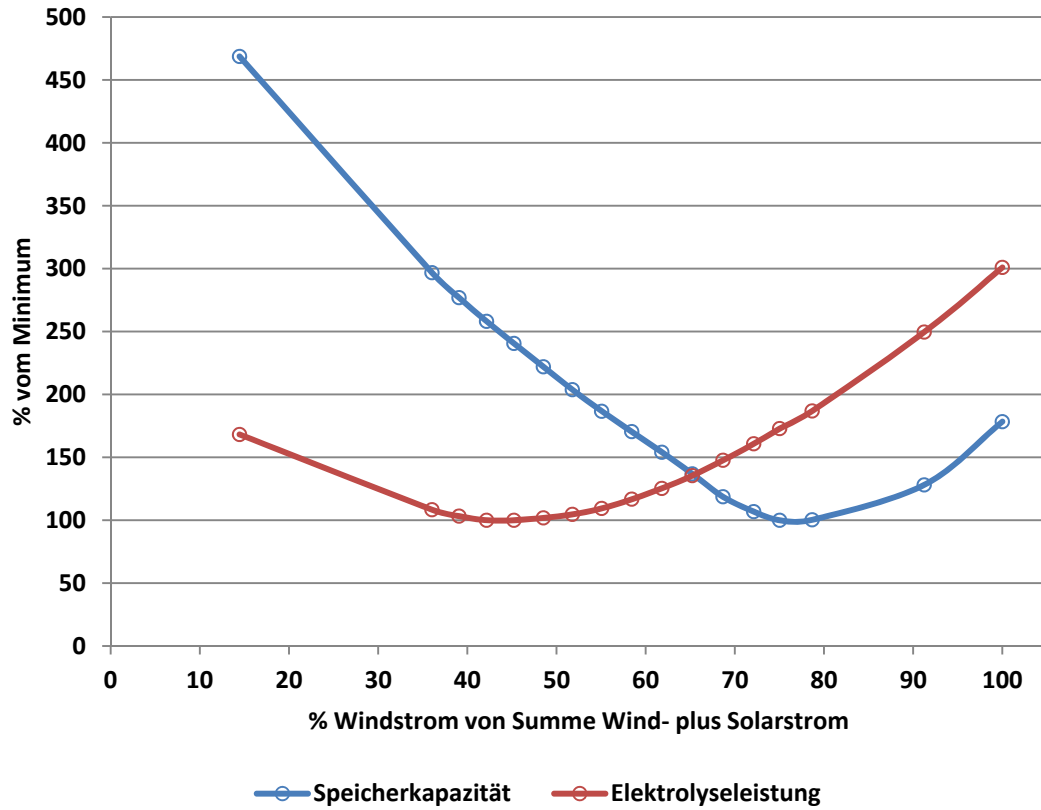
25

26

27

28

29



30 **Varianten-Daten:**

31 Windstrom PV-Strom Sp.Kap. GWh Abregel. GWh Ely. %

32

| | | | | | |
|----|-------------|-------------|---------------|--------------|-------|
| 33 | 1 | 0 | 14.003 | 1.343 | 322 |
| 34 | 10,42354693 | 1 | 10.058 | 1.363 | 267 |
| 35 | 3,690344807 | 1 | 7.878 | 1.372 | 200 |
| 36 | 3,005939775 | 1 | 7.849 | 1.315 | 185 |
| 37 | 2,587522892 | 1 | 8.387 | 1.332 | 172 |
| 38 | 2,192903367 | 1 | 9.312 | 1.333 | 158 |
| 39 | 1,876452562 | 1 | 10.743 | 1.347 | 145 |
| 40 | 1,619618448 | 1 | 12.095 | 1.363 | 134 |
| 41 | 1,406769231 | 1 | 13.382 | 1.338 | 125 |
| 42 | 1,22570125 | 1 | 14.649 | 1.334 | 117 |
| 43 | 1,073917885 | 1 | 15.994 | 1.348 | 112 |
| 44 | 1 | 1,060596235 | 17.426 | 1.310 | 109 |
| 45 | 1 | 1,210740587 | 18.883 | 1.315 | 107 |
| 46 | 1 | 1,371672031 | 20.255 | 1.328 | 107 |
| 47 | 1 | 1,559559104 | 21.738 | 1.349 | 110,5 |
| 48 | 1 | 1,774293645 | 23.295 | 1.317 | 116 |
| 49 | 1 | 5,916973188 | 36.786 | 1.333 | 180 |

50

51

52 **Diagramm-Daten:**

53

54 Anteil PV- Speicherkaпа Elektrolyselei
strom (%) zität stung

| | | | |
|----|------------|------------|------------|
| 55 | 100 | 178,404892 | 300,934579 |
| 56 | 91,2461514 | 128,143713 | 249,53271 |
| 57 | 78,6796058 | 100,369474 | 186,915888 |
| 58 | 75,0370686 | 100 | 172,897196 |
| 59 | 72,1256134 | 106,854376 | 160,747664 |
| 60 | 68,6805429 | 118,639317 | 147,663551 |
| 61 | 65,234956 | 136,870939 | 135,514019 |
| 62 | 61,8265018 | 154,096063 | 125,233645 |
| 63 | 58,4505242 | 170,493056 | 116,82243 |
| 64 | 55,0703402 | 186,63524 | 109,345794 |
| 65 | 51,7820832 | 203,771181 | 104,672897 |
| 66 | 48,5296432 | 222,015543 | 101,869159 |
| 67 | 45,2337106 | 240,578418 | 100 |
| 68 | 42,164346 | 258,058351 | 100 |
| 69 | 39,0692287 | 276,952478 | 103,271028 |
| 70 | 36,0452111 | 296,7894 | 108,411215 |
| 71 | 14,4571906 | 468,671168 | 168,224299 |