

# Hessequa Municipality



## ANNEXURE E

### ELECTRO-MECHANICAL SERVICES

#### LIST OF INVERTERS COMPLYING WITH HESSEQUA MUNICIPALITY REQUIREMENTS

##### TYPE TESTED PHOTOVOLTAIC (PV) INVERTERS ITO NRS 097-2-1

| Make | Model                     | Test House     | Certificate date | Valid until | Report number        | Certificate of Compliance number | Comments   |
|------|---------------------------|----------------|------------------|-------------|----------------------|----------------------------------|--|
| ABB  | PRO-33.0-TL-OUTD-400      | Bureau Veritas | 2014/10/10       | *           | 13TH0463-NRS 097-2-1 | U14-0530                         | The unit must be provided with an external RMCU type B |
| ABB  | PRO-33.0-TL-OUTD-S-400    | Bureau Veritas | 2014/10/10       | *           | 13TH0463-NRS 097-2-1 | U14-0530                         | The unit must be provided with an external RMCU type B |
| ABB  | PRO-33.0-TL-OUTD-SX-400   | Bureau Veritas | 2014/10/10       | *           | 13TH0463-NRS 097-2-1 | U14-0530                         | The unit must be provided with an external RMCU type B |
| ABB  | PVI-13.8-TL-OUTD          | TUV Rheinland  | 2015/02/08       | *           | 28 107 377 001       | AK 60099744 0001                 |  |
| ABB  | PVI-13.8-TL-OUTD-S        | TUV Rheinland  | 2015/02/08       | *           | 28 107 377 001       | AK 60099744 0001                 |  |
| ABB  | PVI-13.8-TL-OUTD-FS       | TUV Rheinland  | 2015/02/08       | *           | 28 107 377 001       | AK 60099744 0001                 |  |
| ABB  | PVI-13.8-TL-OUTD-W        | TUV Rheinland  | 2015/02/08       | *           | 28 107 377 001       | AK 60099744 0001                 |  |
| ABB  | PVI-12.5-TL-OUTD          | TUV Rheinland  | 2015/02/08       | *           | 28 107 377 001       | AK 60099744 0001                 |  |
| ABB  | PVI-12.5-TL-OUTD-S        | TUV Rheinland  | 2015/02/08       | *           | 28 107 377 001       | AK 60099744 0001                 |  |
| ABB  | PVI-12.5-TL-OUTD-FS       | TUV Rheinland  | 2015/02/08       | *           | 28 107 377 001       | AK 60099744 0001                 |  |
| ABB  | PVI-12.5-TL-OUTD-W        | TUV Rheinland  | 2015/02/08       | *           | 28 107 377 001       | AK 60099744 0001                 |  |
| ABB  | PVI-11-TL-OUTD            | TUV Rheinland  | 2015/02/08       | *           | 28 107 377 001       | AK 60099744 0001                 |  |
| ABB  | PVI-11-TL-OUTD-S          | TUV Rheinland  | 2015/02/08       | *           | 28 107 377 001       | AK 60099744 0001                 |  |
| ABB  | PVI-11-TL-OUTD-FS         | TUV Rheinland  | 2015/02/08       | *           | 28 107 377 001       | AK 60099744 0001                 |  |
| ABB  | PVI-11-TL-OUTD-W          | TUV Rheinland  | 2015/02/08       | *           | 28 107 377 001       | AK 60099744 0001                 |  |
| ABB  | PVI-10-TL-OUTD            | TUV Rheinland  | 2015/02/08       | *           | 28 107 377 001       | AK 60099744 0001                 |  |
| ABB  | PVI-10-TL-OUTD-S          | TUV Rheinland  | 2015/02/08       | *           | 28 107 377 001       | AK 60099744 0001                 |  |
| ABB  | PVI-10-TL-OUTD-FS         | TUV Rheinland  | 2015/02/08       | *           | 28 107 377 001       | AK 60099744 0001                 |  |
| ABB  | PVI-8-TL-OUTD             | TUV Rheinland  | 2015/02/08       | *           | 28 107 377 001       | AK 60099744 0001                 |  |
| ABB  | PVI-8-TL-OUTD-S           | TUV Rheinland  | 2015/02/08       | *           | 28 107 377 001       | AK 60099744 0001                 |  |
| ABB  | PVI-8-TL-OUTD-FS          | TUV Rheinland  | 2015/02/08       | *           | 28 107 377 001       | AK 60099744 0001                 |  |
| ABB  | PVI-6-TL-OUTD             | TUV Rheinland  | 2015/02/08       | *           | 28 107 377 001       | AK 60099744 0001                 |  |
| ABB  | PVI-6-TL-OUTD-S           | TUV Rheinland  | 2015/02/08       | *           | 28 107 377 001       | AK 60099744 0001                 |  |
| ABB  | PVI-6-TL-OUTD-FS          | TUV Rheinland  | 2015/02/08       | *           | 28 107 377 001       | AK 60099744 0001                 |  |
| ABB  | TRIO-8.5-TL-OUTD-400      | TUV Rheinland  | 2013/11/28       | *           | 28 106 226 001       | AK 60090280 0001                 |  |
| ABB  | TRIO-8.5-TL-OUTD-S-400    | TUV Rheinland  | 2013/11/28       | *           | 28 106 226 001       | AK 60090280 0001                 |  |
| ABB  | TRIO-7.5-TL-OUTD-400      | TUV Rheinland  | 2013/11/28       | *           | 28 106 226 001       | AK 60090280 0001                 |  |
| ABB  | TRIO-7.5-TL-OUTD-S-400    | TUV Rheinland  | 2013/11/28       | *           | 28 106 226 001       | AK 60090280 0001                 |  |
| ABB  | TRIO-5.8-TL-OUTD-400      | TUV Rheinland  | 2013/11/28       | *           | 28 106 226 001       | AK 60090280 0001                 |  |
| ABB  | TRIO-5.8-TL-OUTD-S-400    | TUV Rheinland  | 2013/11/28       | *           | 28 106 226 001       | AK 60090280 0001                 |  |
| ABB  | TRIO-27.6-TL-OUTD-400     | TUV Rheinland  | 2015/03/23       | *           | 28 107 485 001       | AK 60100657 0001                 |  |
| ABB  | TRIO-27.6-TL-OUTD-S2-400  | TUV Rheinland  | 2015/03/23       | *           | 28 107 485 001       | AK 60100657 0001                 |  |
| ABB  | TRIO-27.6-TL-OUTD-S2X-400 | TUV Rheinland  | 2015/03/23       | *           | 28 107 485 001       | AK 60100657 0001                 |  |
| ABB  | TRIO-27.6-TL-OUTD-S2F-400 | TUV Rheinland  | 2015/03/23       | *           | 28 107 485 001       | AK 60100657 0001                 |  |
| ABB  | TRIO-27.6-TL-OUTD-S1J-400 | TUV Rheinland  | 2015/03/23       | *           | 28 107 485 001       | AK 60100657 0001                 |  |

|           |                           |                |            |   |                      |                  |
|-----------|---------------------------|----------------|------------|---|----------------------|------------------|
| ABB       | TRIO-27.6-TL-OUTD-S2J-400 | TUV Rheinland  | 2015/03/23 | * | 28 107 485 001       | AK 60100657 0001 |
| ABB       | TRIO-27.6-TL-OUTD-W       | TUV Rheinland  | 2015/03/23 | * | 28 107 485 001       | AK 60100657 0001 |
| ABB       | TRIO-20.0-TL-OUTD-400     | TUV Rheinland  | 2015/03/23 | * | 28 107 485 001       | AK 60100657 0001 |
| ABB       | TRIO-20.0-TL-OUTD-S2-400  | TUV Rheinland  | 2015/03/23 | * | 28 107 485 001       | AK 60100657 0001 |
| ABB       | TRIO-20.0-TL-OUTD-S2X-400 | TUV Rheinland  | 2015/03/23 | * | 28 107 485 001       | AK 60100657 0001 |
| ABB       | TRIO-20.0-TL-OUTD-S2F-400 | TUV Rheinland  | 2015/03/23 | * | 28 107 485 001       | AK 60100657 0001 |
| ABB       | TRIO-20.0-TL-OUTD-S1J-400 | TUV Rheinland  | 2015/03/23 | * | 28 107 485 001       | AK 60100657 0001 |
| ABB       | TRIO-20.0-TL-OUTD-S2J-400 | TUV Rheinland  | 2015/03/23 | * | 28 107 485 001       | AK 60100657 0001 |
| ABB       | TRIO-20.0-TL-OUTD-W       | TUV Rheinland  | 2015/03/23 | * | 28 107 485 001       | AK 60100657 0001 |
| AEI Power | 803R008                   | Bureau Veritas | 2014/06/03 | * | 09TH0301-NRS 097-2-1 | U14-0318         |
| AEI Power | 803R010                   | Bureau Veritas | 2014/06/03 | * | 09TH0301-NRS 097-2-1 | U14-0318         |
| AEI Power | 808R013                   | Bureau Veritas | 2014/06/03 | * | 09TH0301-NRS 097-2-1 | U14-0318         |
| AEI Power | 808R017                   | Bureau Veritas | 2014/06/03 | * | 09TH0301-NRS 097-2-1 | U14-0318         |
| AEI Power | 808R020                   | Bureau Veritas | 2014/06/03 | * | 09TH0301-NRS 097-2-1 | U14-0318         |
| AEI Power | 867R008                   | Bureau Veritas | 2014/10/31 | * | 14TH0086-NRS 097-2-1 | U14-0581         |
| AEI Power | 867R010                   | Bureau Veritas | 2014/10/31 | * | 14TH0086-NRS 097-2-1 | U14-0581         |
| AEI Power | 867R013                   | Bureau Veritas | 2014/10/31 | * | 14TH0086-NRS 097-2-1 | U14-0581         |
| AEI Power | 867R017                   | Bureau Veritas | 2014/10/31 | * | 14TH0086-NRS 097-2-1 | U14-0581         |
| AEI Power | 867R020                   | Bureau Veritas | 2014/10/31 | * | 14TH0086-NRS 097-2-1 | U14-0581         |
| AEI Power | 840R040                   | Bureau Veritas | 2014/12/05 | * | 14TH0128-NRS 097-2-1 | U14-0652         |

|                             |                  |                |            |            |                      |                  |   |
|-----------------------------|------------------|----------------|------------|------------|----------------------|------------------|---|
| Beijing Kinglong New Energy | Solartec D 15000 | TUV Rheinland  | 2013/04/19 | *          | 16802129001          | AK502525870001   | RCD or RCM Type B required on supply side   |
| Beijing Kinglong New Energy | Solartec D 12000 | TUV Rheinland  | 2013/04/19 | *          | 16802129001          | AK502525870001   | RCD or RCM Type B required on supply side   |
| Beijing Kinglong New Energy | Solartec D 10000 | TUV Rheinland  | 2013/04/19 | *          | 16802129001          | AK502525870001   | RCD or RCM Type B required on supply side   |
| Danfoss                     | TLX+ 6k          | Bureau Veritas | 2013/08/06 | 2016/08/05 | 10TH0532-NRS 097-2-1 | U13-0577         |   |
| Danfoss                     | TLX Pro+ 6k      | Bureau Veritas | 2013/08/06 | 2016/08/05 | 10TH0532-NRS 097-2-1 | U13-0577         |   |
| Danfoss                     | TLX 8k           | Bureau Veritas | 2013/08/06 | 2016/08/05 | 10TH0532-NRS 097-2-1 | U13-0577         |   |
| Danfoss                     | TLX Pro 8k       | Bureau Veritas | 2013/08/06 | 2016/08/05 | 10TH0532-NRS 097-2-1 | U13-0577         |   |
| Danfoss                     | TLX+ 8k          | Bureau Veritas | 2013/08/06 | 2016/08/05 | 10TH0532-NRS 097-2-1 | U13-0577         |   |
| Danfoss                     | TLX Pro+ 8k,     | Bureau Veritas | 2013/08/06 | 2016/08/05 | 10TH0532-NRS 097-2-1 | U13-0577         |   |
| Danfoss                     | TLX 10k          | Bureau Veritas | 2013/08/06 | 2016/08/05 | 10TH0532-NRS 097-2-1 | U13-0577         |   |
| Danfoss                     | TLX Pro 10k      | Bureau Veritas | 2013/08/06 | 2016/08/05 | 10TH0532-NRS 097-2-1 | U13-0577         |   |
| Danfoss                     | TLX+ 10k         | Bureau Veritas | 2013/08/06 | 2016/08/05 | 10TH0532-NRS 097-2-1 | U13-0577         |   |
| Danfoss                     | TLX Pro+ 10k,    | Bureau Veritas | 2013/08/06 | 2016/08/05 | 10TH0532-NRS 097-2-1 | U13-0577         |   |
| Danfoss                     | TLX 12.5k        | Bureau Veritas | 2013/08/06 | 2016/08/05 | 10TH0532-NRS 097-2-1 | U13-0577         |   |
| Danfoss                     | TLX Pro 12.5k    | Bureau Veritas | 2013/08/06 | 2016/08/05 | 10TH0532-NRS 097-2-1 | U13-0577         |   |
| Danfoss                     | TLX+ 12.5k       | Bureau Veritas | 2013/08/06 | 2016/08/05 | 10TH0532-NRS 097-2-1 | U13-0577         |   |
| Danfoss                     | TLX Pro+ 12.5k,  | Bureau Veritas | 2013/08/06 | 2016/08/05 | 10TH0532-NRS 097-2-1 | U13-0577         |   |
| Danfoss                     | TLX 15k          | Bureau Veritas | 2013/08/06 | 2016/08/05 | 10TH0532-NRS 097-2-1 | U13-0577         |   |
| Danfoss                     | TLX Pro 15k      | Bureau Veritas | 2013/08/06 | 2016/08/05 | 10TH0532-NRS 097-2-1 | U13-0577         |   |
| Danfoss                     | TLX+ 15k         | Bureau Veritas | 2013/08/06 | 2016/08/05 | 10TH0532-NRS 097-2-1 | U13-0577         |   |
| Danfoss                     | TLX Pro+ 15k     | Bureau Veritas | 2013/08/06 | 2016/08/05 | 10TH0532-NRS 097-2-1 | U13-0577         |   |
| Danfoss                     | FLX Pro 5        | Bureau Veritas | 2014/03/28 | *          | 13TH0158-NRS 097-2-1 | U14-0210         | The unit must be provided with an external RMCU type B  |
| Danfoss                     | FLX Pro 6        | Bureau Veritas | 2014/03/28 | *          | 13TH0158-NRS 097-2-1 | U14-0210         | The unit must be provided with an external RMCU type B  |
| Danfoss                     | FLX Pro 7        | Bureau Veritas | 2014/03/28 | *          | 13TH0158-NRS 097-2-1 | U14-0210         | The unit must be provided with an external RMCU type B  |
| Danfoss                     | FLX Pro 8        | Bureau Veritas | 2014/03/28 | *          | 13TH0158-NRS 097-2-1 | U14-0210         | The unit must be provided with an external RMCU type B  |
| Danfoss                     | FLX Pro 9        | Bureau Veritas | 2014/03/28 | *          | 13TH0158-NRS 097-2-1 | U14-0210         | The unit must be provided with an external RMCU type B  |
| Danfoss                     | FLX Pro 10       | Bureau Veritas | 2014/03/28 | *          | 13TH0158-NRS 097-2-1 | U14-0210         | The unit must be provided with an external RMCU type B  |
| Danfoss                     | FLX Pro 12.5     | Bureau Veritas | 2014/03/28 | *          | 13TH0158-NRS 097-2-1 | U14-0210         | The unit must be provided with an external RMCU type B  |
| Danfoss                     | FLX Pro 15       | Bureau Veritas | 2014/03/28 | *          | 13TH0158-NRS 097-2-1 | U14-0210         | The unit must be provided with an external RMCU type B  |
| Danfoss                     | FLX Pro 17       | Bureau Veritas | 2014/03/28 | *          | 13TH0158-NRS 097-2-1 | U14-0210         | The unit must be provided with an external RMCU type B  |
| Fronius                     | SYMO 10.0-3-M    | TUV Rheinland  | 2014/10/14 | *          | 28 106 966 001       | AK 60097128 0001 |   |
| Fronius                     | SYMO 12.5-3-M    | TUV Rheinland  | 2014/10/14 | *          | 28 106 966 001       | AK 60097128 0001 |   |
| Fronius                     | SYMO 15.0-3-M    | TUV Rheinland  | 2014/10/14 | *          | 28 106 966 001       | AK 60097128 0001 |   |
| Fronius                     | SYMO 17.5-3-M    | TUV Rheinland  | 2014/10/14 | *          | 28 106 966 001       | AK 60097128 0001 |   |
| Fronius                     | SYMO 20.0-3-M    | TUV Rheinland  | 2014/10/14 | *          | 28 106 966 001       | AK 60097128 0001 |   |
| Fronius                     | SYMO 8.2-3-M     | TUV Rheinland  | 2014/09/23 | *          | 28 106 964 001       | AK 60096700 0001 |   |
| Fronius                     | SYMO 8.0-3-M     | TUV Rheinland  | 2014/09/23 | *          | 28 106 964 001       | AK 60096700 0001 |   |
| Fronius                     | SYMO 7.0-3-M     | TUV Rheinland  | 2014/09/23 | *          | 28 106 964 001       | AK 60096700 0001 |   |
| Fronius                     | SYMO 6.7-3-M     | TUV Rheinland  | 2014/09/23 | *          | 28 106 964 001       | AK 60096700 0001 |   |
| Fronius                     | SYMO 6.0-3-M     | TUV Rheinland  | 2014/09/23 | *          | 28 106 964 001       | AK 60096700 0001 |   |
| Fronius                     | SYMO 5.5-3-M     | TUV Rheinland  | 2014/09/23 | *          | 28 106 964 001       | AK 60096700 0001 |   |
| Fronius                     | SYMO 5.0-3-M     | TUV Rheinland  | 2014/09/23 | *          | 28 106 964 001       | AK 60096700 0001 |   |
| Fronius                     | SYMO 4.5-3-M     | TUV Rheinland  | 2014/09/23 | *          | 28 106 964 001       | AK 60096700 0001 |   |
| Fronius                     | SYMO 3.7-3-M     | TUV Rheinland  | 2014/09/23 | *          | 28 106 964 001       | AK 60096700 0001 |   |
| Fronius                     | SYMO 3.0-3-M     | TUV Rheinland  | 2014/09/23 | *          | 28 106 964 001       | AK 60096700 0001 |   |
| Fronius                     | SYMO 4.5-3-S     | TUV Rheinland  | 2014/09/23 | *          | 28 106 930 001       | AK 60096699 0001 |   |
| Fronius                     | SYMO 3.7-3-S     | TUV Rheinland  | 2014/09/23 | *          | 28 106 930 001       | AK 60096699 0001 |   |
| Fronius                     | SYMO 3.0-3-S     | TUV Rheinland  | 2014/09/23 | *          | 28 106 930 001       | AK 60096699 0001 |   |
| Fronius                     | GALVO 3.1-1      | TUV Rheinland  | 2014/09/26 | *          | 28 106 965 001       | AK 60096769 0001 |   |
| Fronius                     | GALVO 3.0-1      | TUV Rheinland  | 2014/09/26 | *          | 28 106 965 001       | AK 60096769 0001 |   |
| Fronius                     | GALVO 2.5-1      | TUV Rheinland  | 2014/09/26 | *          | 28 106 965 001       | AK 60096769 0001 |   |
| Fronius                     | GALVO 2.0-1      | TUV Rheinland  | 2014/09/26 | *          | 28 106 965 001       | AK 60096769 0001 |   |
| Fronius                     | GALVO 1.5-1      | TUV Rheinland  | 2014/09/26 | *          | 28 106 965 001       | AK 60096769 0001 |   |
| Goodwe                      | GW10K-DT         | Bureau Veritas | 2013/10/09 | 2016/10/08 | 13TH0422-NRS 097-2-1 | U13-0723         |   |
| Goodwe                      | GW12K-DT         | Bureau Veritas | 2013/10/09 | 2016/10/08 | 13TH0422-NRS 097-2-1 | U13-0723         |   |
| Goodwe                      | GW15K-DT         | Bureau Veritas | 2013/10/09 | 2016/10/08 | 13TH0422-NRS 097-2-1 | U13-0723         |   |
| Goodwe                      | GW17K-DT         | Bureau Veritas | 2013/10/09 | 2016/10/08 | 13TH0422-NRS 097-2-1 | U13-0723         |   |
| Goodwe                      | GW20K-DT         | Bureau Veritas | 2013/10/09 | 2016/10/08 | 13TH0422-NRS 097-2-1 | U13-0723         |   |
| Goodwe                      | GW 4000-SS       | Bureau Veritas | 2013/10/14 | 2016/10/13 | 13TH0421-NRS 097-2-1 | U13-0736         |   |
| Goodwe                      | GW 4600-SS       | Bureau Veritas | 2013/10/14 | 2016/10/13 | 13TH0421-NRS 097-2-1 | U13-0736         | If used for multiphase phase installations above 3kW, the following requirements shall be complied with as stipulated in the Bureau Veritas Test Report 13TH0421-NRS097-2-1 "The single-phase inverters are not able to communicate with each other and are only able to detect an out-of-bound voltage on the connected single phase. Therefore in the final installation an additional all phases monitoring or system will be necessary to detect an out-of-bound voltage on all phases". Detail thereof must be provided to the Municipality with the commissioning approval documentation. Alternatively, the inverter must only be used for multiphase installations ≤ 3kW. |
| Growatt                     | Growatt 7000UE   | Bureau Veritas | 2014/03/21 | *          | 12TH0124-NRS 097-2-1 | U14-0190         |   |
| Growatt                     | Growatt 8000UE   | Bureau Veritas | 2014/03/21 | *          | 12TH0124-NRS 097-2-1 | U14-0190         |   |
| Growatt                     | Growatt 9000UE   | Bureau Veritas | 2014/03/21 | *          | 12TH0124-NRS 097-2-1 | U14-0190         |   |
| Growatt                     | Growatt 10000UE  | Bureau Veritas | 2014/03/21 | *          | 12TH0124-NRS 097-2-1 | U14-0190         |   |
| Growatt                     | Growatt 12000UE  | Bureau Veritas | 2014/03/21 | *          | 12TH0124-NRS 097-2-1 | U14-0190         |   |
| Growatt                     | Growatt 18000UE  | Bureau Veritas | 2014/03/21 | *          | 12TH0124-NRS 097-2-1 | U14-0190         |   |

|                  |                          |                             |            |            |                                       |                      |  |
|------------------|--------------------------|-----------------------------|------------|------------|---------------------------------------|----------------------|--|
| Growatt          | Growatt 20000UE          | Bureau Veritas              | 2014/03/21 | *          | 12TH0124-NRS 097-2-1                  | U14-0190             |  |
| Ingeteam         | Ingecon Sun 10 TL        | SGS                         | 2015/05/22 | 2018/04/16 | 2614/0337-B23-E1                      | 2614/0337/B23/E1-CER |  |
| Ingeteam         | Ingecon Sun 12.5 TL      | SGS                         | 2015/05/22 | 2018/04/16 | 2614/0337-B23-E1                      | 2614/0337/B23/E1-CER |  |
| Ingeteam         | Ingecon Sun 15 TL        | SGS                         | 2015/05/22 | 2018/04/16 | 2614/0337-B23-E1                      | 2614/0337/B23/E1-CER |  |
| Ingeteam         | Ingecon Sun 20 TL        | SGS                         | 2015/05/22 | 2018/04/16 | 2614/0337-B23-E1                      | 2614/0337/B23/E1-CER |  |
| Ingeteam         | Ingecon Sun 10 TL M      | SGS                         | 2015/05/22 | 2018/04/16 | 2614/0337-B23-E1                      | 2614/0337/B23/E1-CER |  |
| Ingeteam         | Ingecon Sun 12.5 TL M    | SGS                         | 2015/05/22 | 2018/04/16 | 2614/0337-B23-E1                      | 2614/0337/B23/E1-CER |  |
| Ingeteam         | Ingecon Sun 15 TL M      | SGS                         | 2015/05/22 | 2018/04/16 | 2614/0337-B23-E1                      | 2614/0337/B23/E1-CER |  |
| Ingeteam         | Ingecon Sun 20 TL M      | SGS                         | 2015/05/22 | 2018/04/16 | 2614/0337-B23-E1                      | 2614/0337/B23/E1-CER |  |
| Ingeteam         | Ingecon Sun 2.5 TL M     | SGS                         | 2015/04/16 | 2018/04/16 | 2614/0337-B21                         | 2614/0337/B21-CER    |  |
| Ingeteam         | Ingecon Sun 2.7 TL M     | SGS                         | 2015/04/16 | 2018/04/16 | 2614/0337-B21                         | 2614/0337/B21-CER    |  |
| Ingeteam         | Ingecon Sun 3 TL M       | SGS                         | 2015/04/16 | 2018/04/16 | 2614/0337-B21                         | 2614/0337/B21-CER    |  |
| Ingeteam         | Ingecon Sun 3.3 TL M     | SGS                         | 2015/04/16 | 2018/04/16 | 2614/0337-B21                         | 2614/0337/B21-CER    |  |
| Ingeteam         | Ingecon Sun 3.68 TL M    | SGS                         | 2015/04/16 | 2018/04/16 | 2614/0337-B21                         | 2614/0337/B21-CER    |  |
| Ingeteam         | Ingecon Sun 4.6 TL M     | SGS                         | 2015/04/16 | 2018/04/16 | 2614/0337-B21                         | 2614/0337/B21-CER    |  |
| Ingeteam         | Ingecon Sun 5 TL M       | SGS                         | 2015/04/16 | 2018/04/16 | 2614/0337-B21                         | 2614/0337/B21-CER    |  |
| Ingeteam         | Ingecon Sun 5.5 TL M     | SGS                         | 2015/04/16 | 2018/04/16 | 2614/0337-B21                         | 2614/0337/B21-CER    |  |
| Ingeteam         | Ingecon Sun 6 TL M       | SGS                         | 2015/04/16 | 2018/04/16 | 2614/0337-B21                         | 2614/0337/B21-CER    |  |
| Ingeteam         | Ingecon Sun 2.5 TL       | SGS                         | 2015/06/12 | 2018/04/17 | 2615/0254/1                           | 2615/0254/11-CER/E1  |  |
| Ingeteam         | Ingecon Sun 3 TL         | SGS                         | 2015/06/12 | 2018/04/17 | 2615/0254/1                           | 2615/0254/11-CER/E1  |  |
| Ingeteam         | Ingecon Sun 3.3 TL       | SGS                         | 2015/06/12 | 2018/04/17 | 2615/0254/1                           | 2615/0254/11-CER/E1  |  |
| Ingeteam         | Ingecon Sun 3.68 TL      | SGS                         | 2015/06/12 | 2018/04/17 | 2615/0254/1                           | 2615/0254/11-CER/E1  |  |
| Ingeteam         | Ingecon Sun 4.6 TL       | SGS                         | 2015/06/12 | 2018/04/17 | 2615/0254/1                           | 2615/0254/11-CER/E1  |  |
| Ingeteam         | Ingecon Sun 5 TL         | SGS                         | 2015/06/12 | 2018/04/17 | 2615/0254/1                           | 2615/0254/11-CER/E1  |  |
| Ingeteam         | Ingecon Sun 6 TL         | SGS                         | 2015/06/12 | 2018/04/17 | 2615/0254/1                           | 2615/0254/11-CER/E1  |  |
| Ingeteam         | Ingecon Sun 7.5 TL       | SGS                         | 2015/06/12 | 2018/04/17 | 2615/0254/1                           | 2615/0254/11-CER/E1  |  |
| Ingeteam         | Ingecon Sun 8.2 TL       | SGS                         | 2015/06/12 | 2018/04/17 | 2615/0254/1                           | 2615/0254/11-CER/E1  |  |
| Ingeteam         | Ingecon Sun 8.6 TL       | SGS                         | 2015/06/12 | 2018/04/17 | 2615/0254/1                           | 2615/0254/11-CER/E1  |  |
| Ingeteam         | Ingecon Sun 10 TL        | SGS                         | 2015/06/12 | 2018/04/17 | 2615/0254/1                           | 2615/0254/11-CER/E1  |  |
| Ingeteam         | Ingecon Sun Storage 3 TL | SGS                         | 2015/06/12 | 2018/04/17 | 2615/0254/1                           | 2615/0254/12-CER/E1  |  |
| Ingeteam         | Ingecon Sun Storage 6 TL | SGS                         | 2015/06/12 | 2018/04/17 | 2615/0254/1                           | 2615/0254/12-CER/E1  |  |
| Ingeteam         | Ingecon Sun Storage 3    | SGS                         | 2015/06/12 | 2018/04/17 | 2615/0254/2                           | 2615/0254/22-CER/E2  |  |
| Ingeteam         | Ingecon Sun Storage 6    | SGS                         | 2015/06/12 | 2018/04/17 | 2615/0254/2                           | 2615/0254/22-CER/E2  |  |
| Ingeteam         | Ingecon Sun 2.5          | SGS                         | 2015/06/12 | 2018/04/20 | 2615/0254/2                           | 2615/0254/21-CER/E1  |  |
| Ingeteam         | Ingecon Sun 3            | SGS                         | 2015/06/12 | 2018/04/20 | 2615/0254/2                           | 2615/0254/21-CER/E1  |  |
| Ingeteam         | Ingecon Sun 3.3          | SGS                         | 2015/06/12 | 2018/04/20 | 2615/0254/2                           | 2615/0254/21-CER/E1  |  |
| Ingeteam         | Ingecon Sun 3.68         | SGS                         | 2015/06/12 | 2018/04/20 | 2615/0254/2                           | 2615/0254/21-CER/E1  |  |
| Ingeteam         | Ingecon Sun 4.6          | SGS                         | 2015/06/12 | 2018/04/20 | 2615/0254/2                           | 2615/0254/21-CER/E1  |  |
| Ingeteam         | Ingecon Sun 5            | SGS                         | 2015/06/12 | 2018/04/20 | 2615/0254/2                           | 2615/0254/21-CER/E1  |  |
| Ingeteam         | Ingecon Sun 6            | SGS                         | 2015/06/12 | 2018/04/20 | 2615/0254/2                           | 2615/0254/21-CER/E1  |  |
| Ingeteam         | Ingecon Sun 7.5          | SGS                         | 2015/06/12 | 2018/04/20 | 2615/0254/2                           | 2615/0254/21-CER/E1  |  |
| Ingeteam         | Ingecon Sun 8.2          | SGS                         | 2015/06/12 | 2018/04/20 | 2615/0254/2                           | 2615/0254/21-CER/E1  |  |
| Ingeteam         | Ingecon Sun 8.6          | SGS                         | 2015/06/12 | 2018/04/20 | 2615/0254/2                           | 2615/0254/21-CER/E1  |  |
| Ingeteam         | Ingecon Sun 10           | SGS                         | 2015/06/12 | 2018/04/20 | 2615/0254/2                           | 2615/0254/21-CER/E1  |  |
| MLT              | Powerstar II 6kVA        | Dr J Beukes Pr Eng 20070124 | 2015/02/24 | 2016/03/31 |                                       |                      |  |
| MLT              | Powerstar II 8kVA        |                             | 2015/02/24 | 2016/03/31 |                                       |                      |  |
| MLT              | Powerstar II 12kVA       |                             | 2015/02/24 | 2016/03/31 |                                       |                      |  |
| MLT              | Powerstar II 16kVA       |                             | 2015/02/24 | 2016/03/31 |                                       |                      |  |
| MLT              | Powerstar II 18kVA       |                             | 2015/02/24 | 2016/03/31 |                                       |                      |  |
| MLT              | Powerstar II 24kVA       |                             | 2015/02/24 | 2016/03/31 |                                       |                      |  |
| MLT              | Karoo 70 kVA             |                             | 2014/12/16 | 2016/03/31 |                                       |                      |  |
| Omnik New Energy | Omniksol-13k-TL          | Bureau Veritas              | 2014/02/19 | 2016/07/07 | 12TH0315-NRS 097-2-1                  | U14-0109             |  |
| Omnik New Energy | Omniksol-17k-TL          | Bureau Veritas              | 2014/02/19 | 2016/07/07 | 12TH0315-NRS 097-2-1                  | U14-0109             |  |
| Omnik New Energy | Omniksol-20k-TL          | Bureau Veritas              | 2014/02/19 | 2016/07/07 | 12TH0315-NRS 097-2-1                  | U14-0109             |  |
| Omnik New Energy | Omniksol-1.5k-TL         | Bureau Veritas              | 2013/07/08 | 2016/07/07 | 12TH0314-NRS 097-2-1                  | U13-0470             |  |
| Omnik New Energy | Omniksol-2k-TL           | Bureau Veritas              | 2013/07/08 | 2016/07/07 | 12TH0314-NRS 097-2-1                  | U13-0470             |  |
| Omnik New Energy | Omniksol-3k-TL           | Bureau Veritas              | 2013/07/08 | 2016/07/07 | 12TH0314-NRS 097-2-1                  | U13-0470             |  |
| Omnik New Energy | Omniksol-4k-TL           | Bureau Veritas              | 2013/07/08 | 2016/07/07 | 12TH0314-NRS 097-2-1                  | U13-0470             |  |
| Omnik New Energy | Omniksol-5k-TL           | Bureau Veritas              | 2013/07/08 | 2016/07/07 | 12TH0314-NRS 097-2-1                  | U13-0470             |  |
| ReneSola         | Replus-13000TL           | Bureau Veritas              | 2013/11/11 | 2016/07/07 | OMK-130C1504FCSP-12TH0315-NRS 097-2-1 | U13-0798             |  |
| ReneSola         | Replus-17000TL           | Bureau Veritas              | 2013/11/11 | 2016/07/07 | OMK-130C1504FCSP-12TH0315-NRS 097-2-1 | U13-0798             |  |
| ReneSola         | Replus-20000TL           | Bureau Veritas              | 2013/11/11 | 2016/07/07 | OMK-130C1504FCSP-12TH0315-NRS 097-2-1 | U13-0798             |  |
| ReneSola         | Replus-1500TL            | Bureau Veritas              | 2013/11/11 | 2016/07/07 | OMK-130C1502FCSP-12TH0314-NRS 097-2-1 | U13-0797             |  |
| ReneSola         | Replus-2000TL            | Bureau Veritas              | 2013/11/11 | 2016/07/07 | OMK-130C1502FCSP-12TH0314-NRS 097-2-1 | U13-0797             |  |

|                  |                    |                |            |            |                                       |           |  |
|------------------|--------------------|----------------|------------|------------|---------------------------------------|-----------|--|
| ReneSola         | Replus-3000TL      | Bureau Veritas | 2013/11/11 | 2016/07/07 | OMK-130C1502FCSP-12TH0314-NRS 097-2-1 | U13-0797  |  |
| ReneSola         | Replus-4000TL      | Bureau Veritas | 2013/11/11 | 2016/07/07 | OMK-130C1502FCSP-12TH0314-NRS 097-2-1 | U13-0797  |  |
| ReneSola         | Replus-5000TL      | Bureau Veritas | 2013/11/11 | 2016/07/07 | OMK-130C1502FCSP-12TH0314-NRS 097-2-1 | U13-0797  |  |
| Schneider        | Conext CL 2000E    | Bureau Veritas | 2014/11/21 | *          | PVZA141106C14-NRS 097-2-1             | U14-0636  |  |
| Schneider        | Conext CL 2500E    | Bureau Veritas | 2014/11/21 | *          | PVZA141106C14-NRS 097-2-1             | U14-0636  |  |
| Schneider        | Conext TL 15000E   | Bureau Veritas | 2014/12/12 | *          | PV141204C06-NRS 097-2-1               | U14-0671  |  |
| Schneider        | Conext TL 20000E   | Bureau Veritas | 2014/12/12 | *          | PV141204C06-NRS 097-2-1               | U14-0671  |  |
| SMA              | STP 5000 TL-20     | Bureau Veritas | 2014/07/23 | *          | 12TH0259-NRS 097-2-1                  | U14-0387  |  |
| SMA              | STP 6000 TL-20     | Bureau Veritas | 2014/07/23 | *          | 12TH0259-NRS 097-2-1                  | U14-0387  |  |
| SMA              | STP 7000 TL-20     | Bureau Veritas | 2014/07/23 | *          | 12TH0259-NRS 097-2-1                  | U14-0387  |  |
| SMA              | STP 8000 TL-20     | Bureau Veritas | 2014/07/23 | *          | 12TH0259-NRS 097-2-1                  | U14-0387  |  |
| SMA              | STP 9000 TL-20     | Bureau Veritas | 2014/07/23 | *          | 12TH0259-NRS 097-2-1                  | U14-0387  |  |
| SMA              | STP 10000 TL-20    | Bureau Veritas | 2014/07/23 | *          | 12TH0259-NRS 097-2-1                  | U14-0387  |  |
| SMA              | STP 12000 TL-20    | Bureau Veritas | 2014/07/23 | *          | 12TH0259-NRS 097-2-1                  | U14-0387  |  |
| SMA              | STP 25000 TL-30    | Bureau Veritas | 2014/09/05 | *          | 14TH0304-NRS 097-2-1                  | U14-0478  |  |
| SMA              | STP 20000 TL-30    | Bureau Veritas | 2014/09/06 | *          | 14TH0304-NRS 097-2-1                  | U14-0478  |  |
| SMA              | SB 3000TL-21       | Bureau Veritas | 2012/11/09 | 2015/11/08 | 11TH0290-NRS 097-2-1                  | U12-0872  |  |
| SMA              | SB 3600TL-21       | Bureau Veritas | 2012/11/09 | 2015/11/08 | 11TH0290-NRS 097-2-1                  | U12-0872  |  |
| SMA              | SB 4000TL-21       | Bureau Veritas | 2012/11/09 | 2015/11/08 | 11TH0290-NRS 097-2-1                  | U12-0872  |  |
| SMA              | SB 5000TL-21       | Bureau Veritas | 2012/11/09 | 2015/11/08 | 11TH0290-NRS 097-2-1                  | U12-0872  |  |
| SMA              | SB 1300TL-10       | Bureau Veritas | 2012/09/11 | 2015/09/10 | 11TH0026-NRS 097-2-1                  | U12-0820  |  |
| SMA              | SB 1600TL-10       | Bureau Veritas | 2012/09/11 | 2015/09/10 | 11TH0026-NRS 097-2-1                  | U12-0820  |  |
| SMA              | SB 2100TL          | Bureau Veritas | 2012/09/11 | 2015/09/10 | 11TH0026-NRS 097-2-1                  | U12-0820  |  |
| SMA              | STP 60-10 / MLX 60 | Bureau Veritas | 2015/02/20 | *          | 14TH0075-NRS 097-2-1                  | U15-0066  | The unit must be provided with an external RMCU type B   |
| Socomec          | SUN-PR24KTL65M     | Primara        | 2015/02/11 | *          | 14PP012-04                            | 15-045-00 |  |
| SolarEdge        | SE 2200            | Primara        | 2012/09/24 | 2015/09/24 | 11KFS055-15                           | 12-075-00 |  |
| SolarEdge        | SE 3000            | Primara        | 2012/09/24 | 2015/09/24 | 11KFS055-15                           | 12-075-00 |  |
| SolarEdge        | SE 3300            | Primara        | 2012/09/24 | 2015/09/24 | 11KFS055-15                           | 12-075-00 |  |
| SolarEdge        | SE 3500            | Primara        | 2012/09/24 | 2015/09/24 | 11KFS055-15                           | 12-075-00 |  |
| SolarEdge        | SE 4000            | Primara        | 2012/09/24 | 2015/09/24 | 11KFS055-15                           | 12-075-00 |  |
| SolarEdge        | SE 5000            | Primara        | 2012/09/24 | 2015/09/24 | 11KFS055-15                           | 12-075-00 |  |
| SolarEdge        | SE 6000            | Primara        | 2012/09/24 | 2015/09/24 | 11KFS055-15                           | 12-075-00 |  |
| SolarEdge        | SE5K               | Bureau Veritas | 2014/10/13 | 2015/09/03 | 10TH0222-NRS 097-2-1                  | U12-0798  | The unit must be provided with an external RMCU type B   |
| SolarEdge        | SE7K               | Bureau Veritas | 2014/10/13 | 2015/09/03 | 10TH0222-NRS 097-2-1                  | U12-0798  | The unit must be provided with an external RMCU type B   |
| SolarEdge        | SE8K               | Bureau Veritas | 2014/10/13 | 2015/09/03 | 10TH0222-NRS 097-2-1                  | U12-0798  | The unit must be provided with an external RMCU type B   |
| SolarEdge        | SE9K               | Bureau Veritas | 2014/10/13 | 2015/09/03 | 10TH0222-NRS 097-2-1                  | U12-0798  | The unit must be provided with an external RMCU type B   |
| SolarEdge        | SE10K              | Bureau Veritas | 2014/10/13 | 2015/09/03 | 10TH0222-NRS 097-2-1                  | U12-0798  | The unit must be provided with an external RMCU type B   |
| SolarEdge        | SE12,5K            | Bureau Veritas | 2014/10/13 | 2015/09/03 | 10TH0222-NRS 097-2-1                  | U12-0798  | The unit must be provided with an external RMCU type B   |
| SolarEdge        | SE15K              | Bureau Veritas | 2014/10/13 | 2015/09/03 | 10TH0222-NRS 097-2-1                  | U12-0798  | The unit must be provided with an external RMCU type B   |
| SolarEdge        | SE16K              | Bureau Veritas | 2014/10/13 | 2015/09/03 | 10TH0222-NRS 097-2-1                  | U12-0798  | The unit must be provided with an external RMCU type B   |
| SolarEdge        | SE17K              | Bureau Veritas | 2014/10/13 | 2015/09/03 | 10TH0222-NRS 097-2-1                  | U12-0798  | The unit must be provided with an external RMCU type B   |
| Steca Elektronik | StecaGrid 4200     | Bureau Veritas | 2015/02/12 | *          | 10TH0241-NRS 097-2-1                  | U15-0050  | If used for multiphase phase installations above 3kW, the following requirements shall be complied with as stipulated in the Bureau Veritas Test Report 10TH0241-NRS097-2-1 "The single-phase embedded generators are not able to communicate with each other for disconnection. Therefor for connection above 3kW an external 3 phase monitoring will be necessary to realize an out-of-bound detection for all phases". Detail thereof must be provided to the Municipality with the commissioning approval documentation. <u>Alternatively</u> , the inverter must only be used for multiphase installations ≤ 3kW. |
| Steca Elektronik | StecaGrid 4200x    | Bureau Veritas | 2015/02/12 | *          | 10TH0241-NRS 097-2-1                  | U15-0050  |  |
| Steca Elektronik | StecaGrid 3600     | Bureau Veritas | 2015/02/12 | *          | 10TH0241-NRS 097-2-1                  | U15-0050  |  |
| Steca Elektronik | StecaGrid 3600x    | Bureau Veritas | 2015/02/12 | *          | 10TH0241-NRS 097-2-1                  | U15-0050  |  |
| Steca Elektronik | StecaGrid 3010     | Bureau Veritas | 2015/02/12 | *          | 10TH0241-NRS 097-2-1                  | U15-0050  |  |
| Steca Elektronik | StecaGrid 3010x    | Bureau Veritas | 2015/02/12 | *          | 10TH0241-NRS 097-2-1                  | U15-0050  |  |
| Steca Elektronik | StecaGrid 3000     | Bureau Veritas | 2015/02/12 | *          | 10TH0241-NRS 097-2-1                  | U15-0050  |  |
| Steca Elektronik | StecaGrid 2300     | Bureau Veritas | 2015/02/12 | *          | 10TH0241-NRS 097-2-1                  | U15-0050  |  |
| Steca Elektronik | StecaGrid 2300x    | Bureau Veritas | 2015/02/12 | *          | 10TH0241-NRS 097-2-1                  | U15-0050  |  |
| Steca Elektronik | StecaGrid 1800     | Bureau Veritas | 2015/02/12 | *          | 10TH0241-NRS 097-2-1                  | U15-0050  |  |
| Steca Elektronik | StecaGrid 1800x    | Bureau Veritas | 2015/02/12 | *          | 10TH0241-NRS 097-2-1                  | U15-0050  |  |

\* Until new revision of NRS 097-2-1 released or if there are major changes in the components of the certified type.

RMCU - residual monitoring current unit

RCD - residual current device

RCM - residual current monitoring

Notes:

1. The Municipality of Hessequa shall not incur any liability of any nature whatsoever arising out of the publication by it of this list, or arising out of the selection by the user of a particular inverter. This includes liability for any losses incurred as a result of safety issues or negligence relating to the design, construction, installation, commissioning, operation and maintenance of any inverter listed on the list.
2. This list is for information purposes only and the use thereof as a guideline for the selection of an inverter is at the sole risk of the user.
3. The Municipality does not guarantee the functionality or suitability of any inverter listed on the list.