LAMPIRAN

DATA SPESIFIKASI PEMBANGKIT SOLAR DISH STIRLING

SUMBER : NREL,2014

Ada empat sistem konfigurasi yang dapat digunakan yaitu konfigurasi sistem dari SES (*Stirling Energy Systems*), WGA (*Western Governors Associatio*n), SBP (*Schlaic-Bergermann und Partner*) dan SAIC (*Science Applications International Corporation*).

Tabel 4.1. *Collector Default Parameter Values.*

Variable	**SES**	**WGA**	**SBP**	**SAIC**
Projected Mirror Area (m^2)	87.7	41.2	56.7	113.5
Total Mirror Area(m^2)	91.0	42.9	60	117.2
Insolation Cut In (W/m^2)	200	275	250	375
Wind Stow Speed (m/s)	16	16	16	16
Receiver Aperture Diameter for Reference Intercept Factor (m)	0.184	0.14	0.15	0.38
Reference Intercept Factor	0.995	0.998	0.93	0.90
Reference Focal Length of Mirror (m)	7.45	5.45	4.5	12.0

Tabel 4.2. *Receiver default parameter values*.

Variable	SES	WGA	SBP	SAIC
Absorber Absorptance	0.90	0.90	0.90	0.90
Absorber Surface Area (m^2)	0.6	0.15	0.15	0.8
Cavity Wall Absorptance	0.6	0.6	0.6	0.6
Cavity Wall Surface Area (m^2)	0.6	0.15	0.15	0.8
Internal Diameter of the Cavity Perpendicular to the Receiver Aperture (m)	0.46	0.35	0.37	0.5
Internal Depth of the Cavity Perpendicular to the Aperture (m)	0.46	0.35	0.37	0.5
Receiver Insulation Thickness (m)	0.075	0.075	0.075	0.075
Insulation Thermal Conductivity (W/m-K)	0.06	0.06	0.06	0.06
Delta Temp. for DIR Receiver(^oC)	90	70	70	90

Tabel 4.3 *Stirling Engine Default Parameter values*.

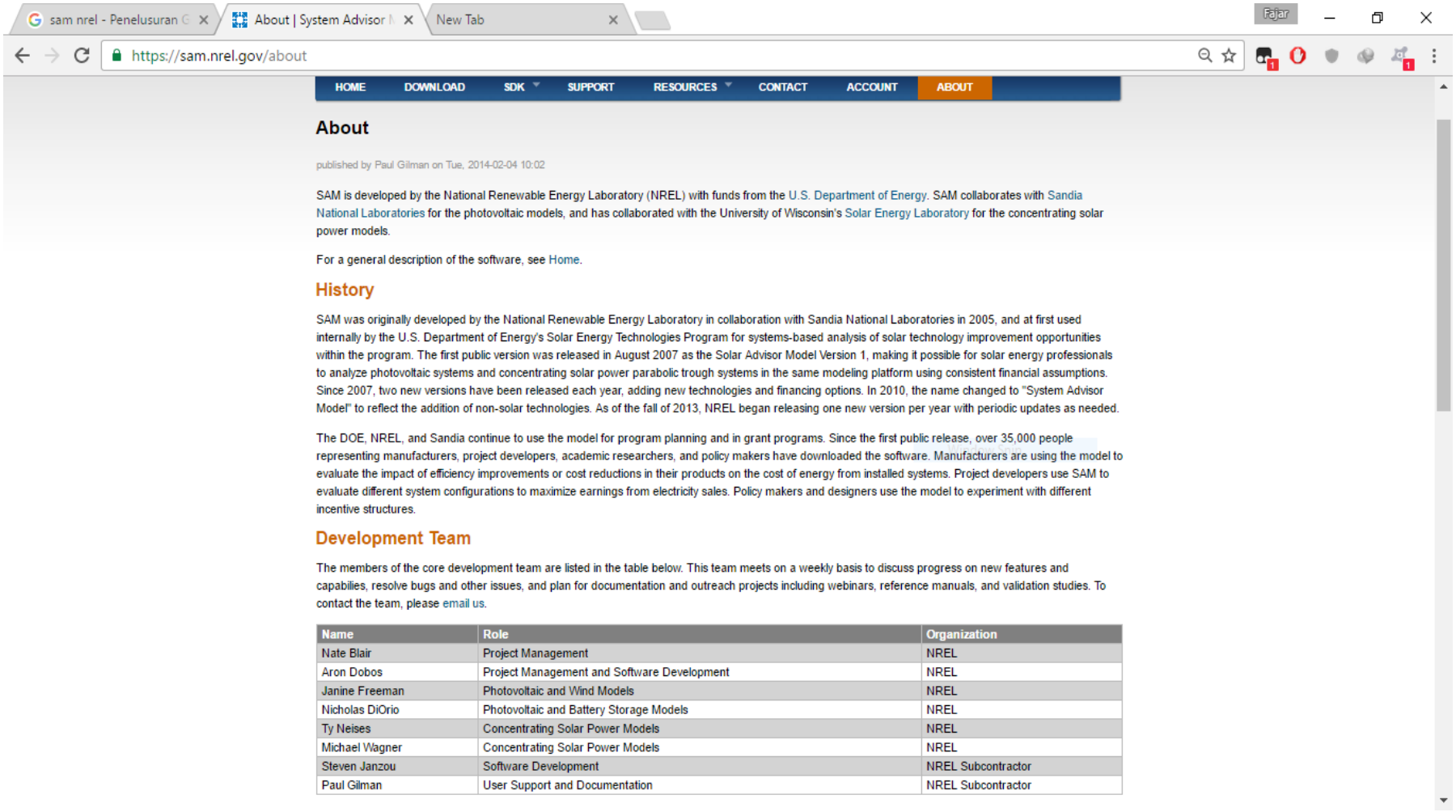
Variable	SES	WGA	SBP	SAIC
Heater Head Set Temperature (K)	993	903	903	993
Heater Head Lowest Temperature (K)	973	903	903	973
Engine Operating Speed (rpm)	1800	1800	1800	2200
Displaced Engine Volume (m^2)	3.80×10^{-4}	1.60×10^{-4}	1.60×10^{-4}	4.80×10^{-4}
Beale Constant Coefficient	4.247×10^{-2}	8.50686×10^{-2}	$-1,82451 \times 10^{-3}$	-1.6×10^{-2}
Beale First-order Coefficient	1.682×10^{-5}	1.94116×10^{-5}	2.60289×10^{-5}	1.5×10^{-5}
Beale Second-order Coefficient	-5.105×10^{-10}	-3.18449×10^{-10}	-4.68164×10^{-10}	-3.50×10^{-10}
Beale Third-order Coefficient	7.07260×10^{-15}	0	0	3.85×10^{-15}
Beale Fourth-order Coefficient	-3.586×10^{-20}	0	0	-1.6×10^{-20}
Pressure Constant Coefficient	6.58769×10^{-1}	-7.36342×10^{-1}	-2.00284×10^{-2}	3.47944×10^{-5}
Pressure First-order Coefficient	2.34963×10^{-4}	3.6416×10^{-4}	3.52522×10^{-4}	5.26329×10^{-9}

Tabel 4.4 *Parasitic Variable Reference Conditions.*

Variable	SES	WGA	SBP	SAIC
Pump Parasitic Power (W)	150	100	175	300
Pump Speed (rpm)	1800	1800	1800	1800
Cooling Fluid Type	50% EG	50% EG	water	50% EG
Cooling Fluid Temperature (K)	288	288	288	288
Cooling Fluid Volumetric Flow Rate (gal/min)	9	7.5	7.5	12
Cooling System Fan Test Power (W)	1000	410	510	2500
Cooling System Fan Test Speed (rpm)	890	890	890	850
Fan Air Density (kg/m3)	1.2	1.2	1.2	1.2
Fan Volumetric Flow Rate (CFM)	6000	4000	4500	10000

No	Beban	Tegangan (V)	Arus (A)	Daya (kW)	Frekuensi	Waktu (Jam)	Per Hari (kWh)	Per Bulan (kWh)
1	motor 1	350	1.07	0.3745	50	4	1.498	44.94
2	motor 2	220	0.56	0.1232	50	4	0.4928	14.784
3	motor 3	220	0.56	0.1232	50	4	0.4928	14.784
4	transformer	220	2.25	0.495	50	4	1.98	59.4
5	4 kulkas	220	0.45	0.396	50	24	9.504	285.12
6	6 ac	220	1.81	0.3982	50	8	3.1856	95.568
7	2 pompa air	220	1.3	0.572	50	4	2.288	68.64
8	2 tv	220	0.54	0.2376	50	10	2.376	71.28
9	30 lampu industri 50W	220	0.65	4.29	50	21	90.09	2702.7
10	5 mesin cuci	220	1.05	1.155	50	10	11.55	346.5
11	50 mesin jahit 60W	220	1.2	13.2	50	8	105.6	3168
TOTAL							229.0572	6871.716

No	Jam	Motor 1	Motor 2	Motor 3	Ac	Transformer	Mesin Jahit 60W	Kulkas	Lampu Industri 50 W	Mesin Cuci	Pompa Air	Tv	Jumlah
1	06.00							0.4	1.07				1.47
2	07.00					0.45	6.6	0.4	4.29				11.74
3	08.00	0.37	0.125	0.125		0.45	6.6	0.4	4.29	1.155	0.572		14.087
4	09.00	0.37	0.125	0.125		0.45	6.6	0.4	4.29	1.155	0.572	0.24	14.327
5	10.00	0.37	0.125	0.125	0.4	0.45	6.6	0.4	4.29	1.155	0.572	0.24	14.727
6	11.00	0.37	0.125	0.125	0.4	0.45	6.6	0.4	4.29	1.155	0.572	0.24	14.727
7	12.00				0.4		9.9	0.4	4.29	1.155		0.24	16.385
8	13.00				0.4		13.2	0.4	4.29	1.155			19.445
9	14.00				0.4		13.2	0.4	4.29	1.155			19.445
10	15.00				0.4		13.2	0.4	4.29	1.155		0.24	19.685
11	16.00				0.4		9.9	0.4	4.29	1.155		0.24	16.385
12	17.00				0.4		6.6	0.4	4.29	1.155		0.24	13.085
13	18.00							0.4	4.29			0.24	4.93
14	19.00							0.4	4.29			0.24	4.93
15	20.00							0.4	1.07			0.24	1.71
16	21.00							0.4	1.07				1.47
17	22.00							0.4	1.07				1.47
18	23.00							0.4	1.07				1.47
19	24.00							0.4	1.07				1.47
20	01.00							0.4	1.07				1.47
21	02.00							0.4	1.07				1.47
22	03.00							0.4	1.07				1.47
23	04.00							0.4	1.07				1.47
24	05.00							0.4	1.07				1.47
		1.48	0.5	0.5	3.2	2.25	99	9.6	67.54	11.55	2.288	2.4	200.308



About

published by Paul Gilman on Tue, 2014-02-04 10:02

SAM is developed by the National Renewable Energy Laboratory (NREL) with funds from the U.S. Department of Energy. SAM collaborates with Sandia National Laboratories for the photovoltaic models, and has collaborated with the University of Wisconsin's Solar Energy Laboratory for the concentrating solar power models.

For a general description of the software, see Home.

History

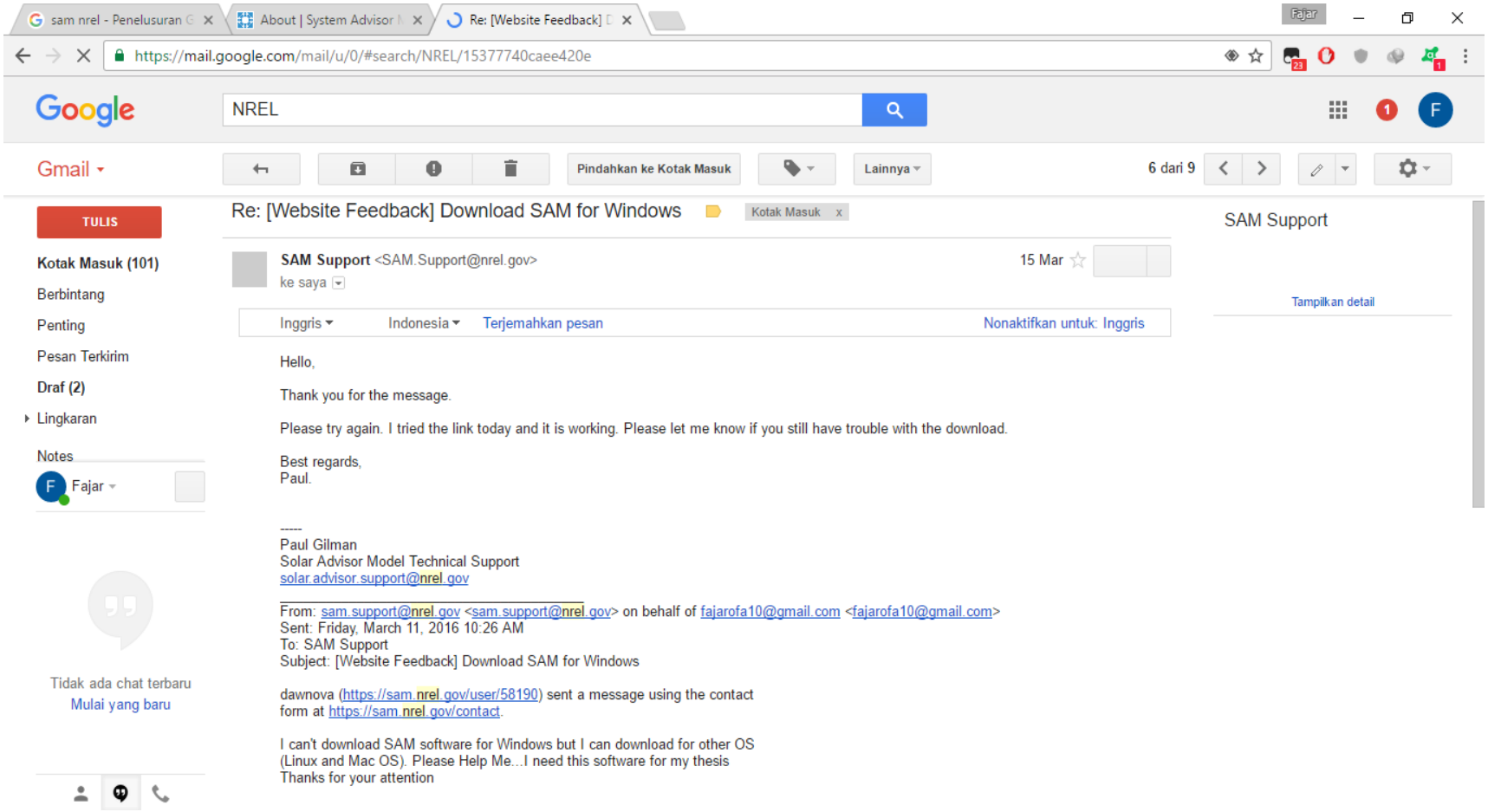
SAM was originally developed by the National Renewable Energy Laboratory in collaboration with Sandia National Laboratories in 2005, and at first used internally by the U.S. Department of Energy's Solar Energy Technologies Program for systems-based analysis of solar technology improvement opportunities within the program. The first public version was released in August 2007 as the Solar Advisor Model Version 1, making it possible for solar energy professionals to analyze photovoltaic systems and concentrating solar power parabolic trough systems in the same modeling platform using consistent financial assumptions. Since 2007, two new versions have been released each year, adding new technologies and financing options. In 2010, the name changed to "System Advisor Model" to reflect the addition of non-solar technologies. As of the fall of 2013, NREL began releasing one new version per year with periodic updates as needed.

The DOE, NREL, and Sandia continue to use the model for program planning and in grant programs. Since the first public release, over 35,000 people representing manufacturers, project developers, academic researchers, and policy makers have downloaded the software. Manufacturers are using the model to evaluate the impact of efficiency improvements or cost reductions in their products on the cost of energy from installed systems. Project developers use SAM to evaluate different system configurations to maximize earnings from electricity sales. Policy makers and designers use the model to experiment with different incentive structures.

Development Team

The members of the core development team are listed in the table below. This team meets on a weekly basis to discuss progress on new features and capabilities, resolve bugs and other issues, and plan for documentation and outreach projects including webinars, reference manuals, and validation studies. To contact the team, please email us.

Name	Role	Organization
Nate Blair	Project Management	NREL
Aron Dobos	Project Management and Software Development	NREL
Janine Freeman	Photovoltaic and Wind Models	NREL
Nicholas DiOrio	Photovoltaic and Battery Storage Models	NREL
Ty Neises	Concentrating Solar Power Models	NREL
Michael Wagner	Concentrating Solar Power Models	NREL
Steven Janzou	Software Development	NREL Subcontractor
Paul Gilman	User Support and Documentation	NREL Subcontractor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Best regards,
Paul.

Paul Gilman
Solar Advisor Model Technical Support
solar.advisor.support@nrel.gov
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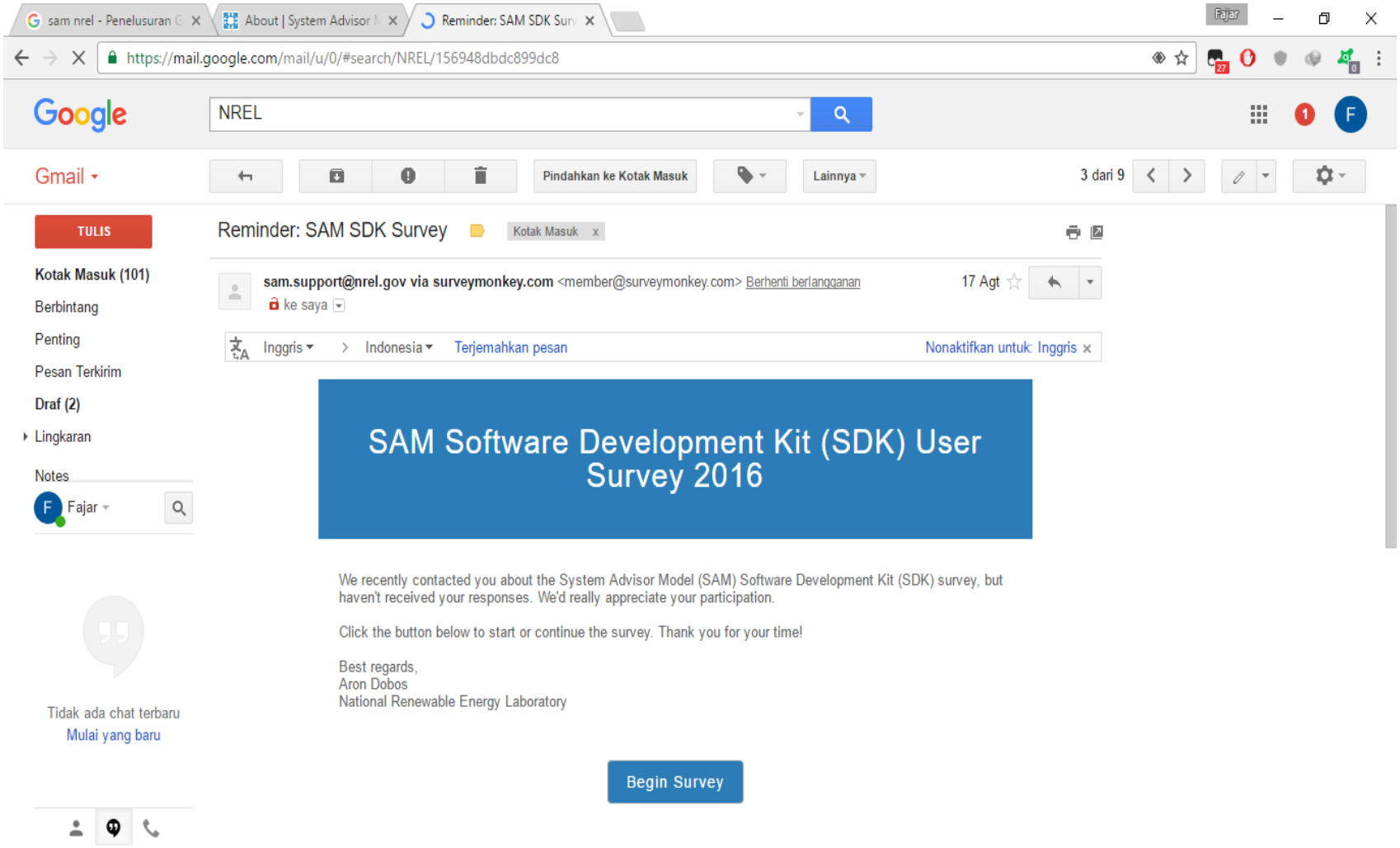
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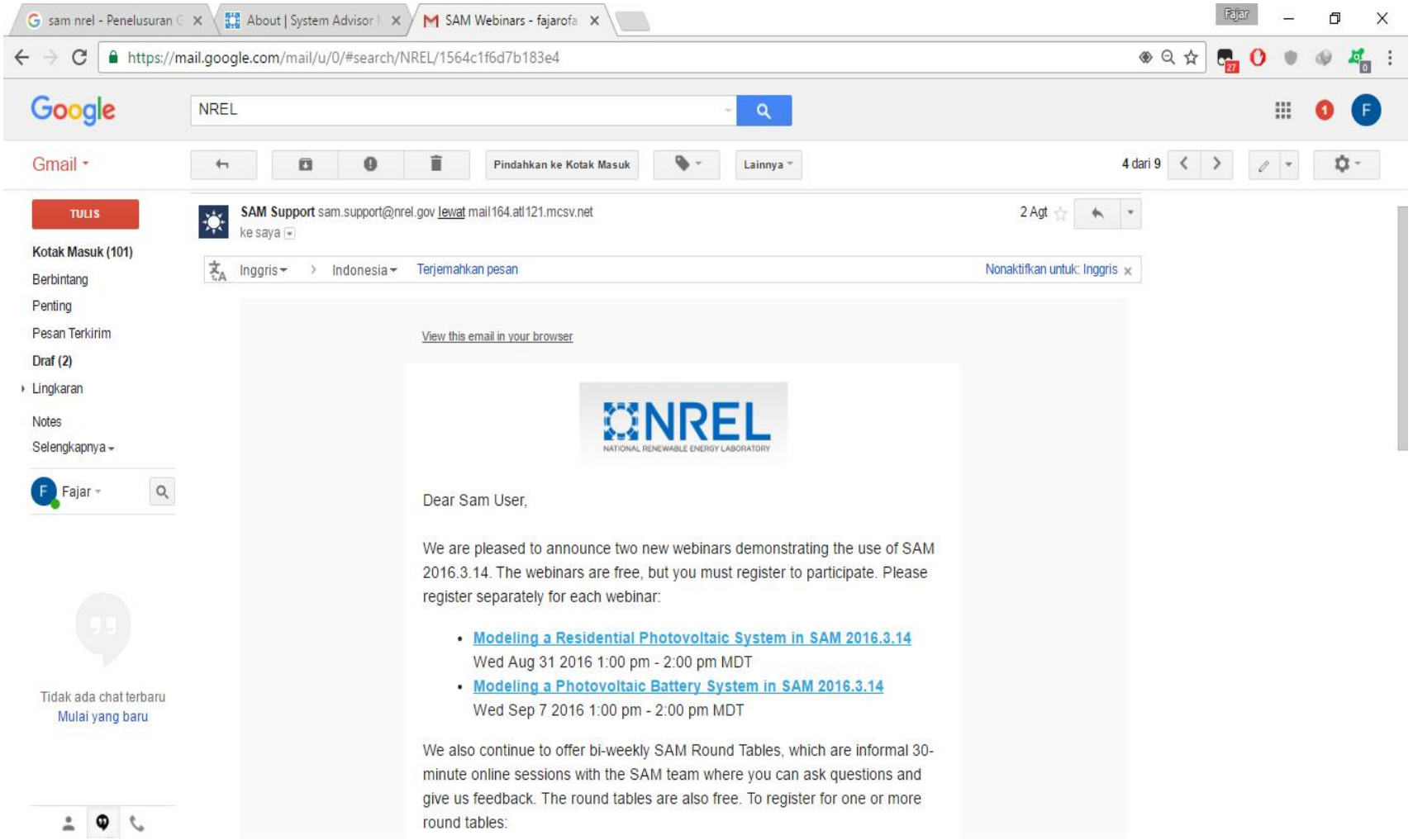
SAM Software Development Kit (SDK) User Survey 2016
We recently contacted you about the System Advisor Model (SAM) Software Development Kit (SDK) survey, but haven't received your responses. We'd really appreciate your participation.
Click the button below to start or continue the survey. Thank you for your time!
Best regards,
Aron Dobos
National Renewable Energy Laboratory
Begin Survey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Dear Sam User,
We are pleased to announce two new webinars demonstrating the use of SAM 2016.3.14. The webinars are free, but you must register to participate. Please register separately for each webinar:
Modeling a Residential Photovoltaic System in SAM 2016.3.14
Wed Aug 31 2016 1:00 pm - 2:00 pm MDT
Modeling a Photovoltaic Battery System in SAM 2016.3.14
Wed Sep 7 2016 1:00 pm - 2:00 pm MDT
We also continue to offer bi-weekly SAM Round Tables, which are informal 30-minute online sessions with the SAM team where you can ask questions and give us feedback. The round tables are also free. To register for one or more round tables: