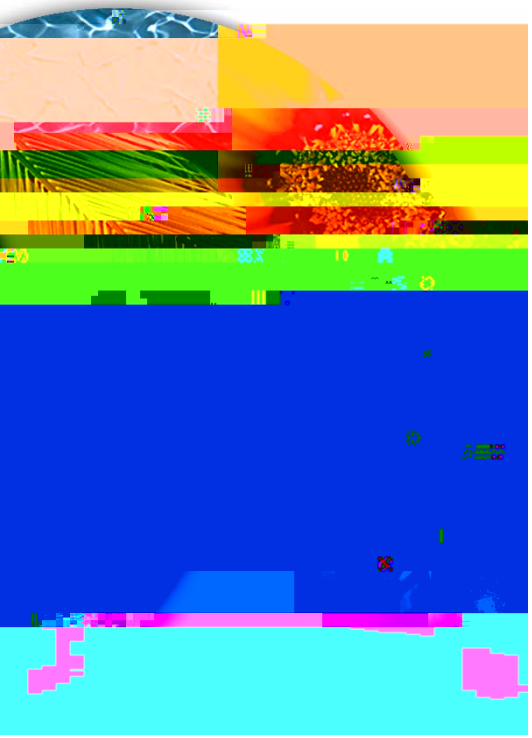


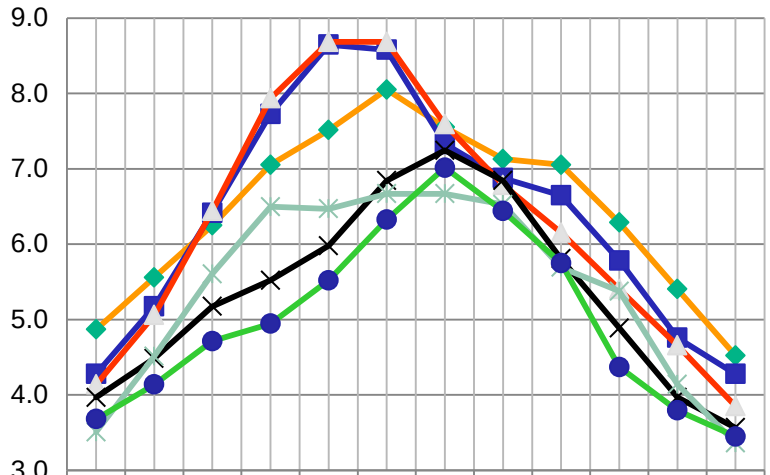
RE-energizing the Border

Opportunities for sustainable development through renewable energies in Mexican border states

Solar power at the border

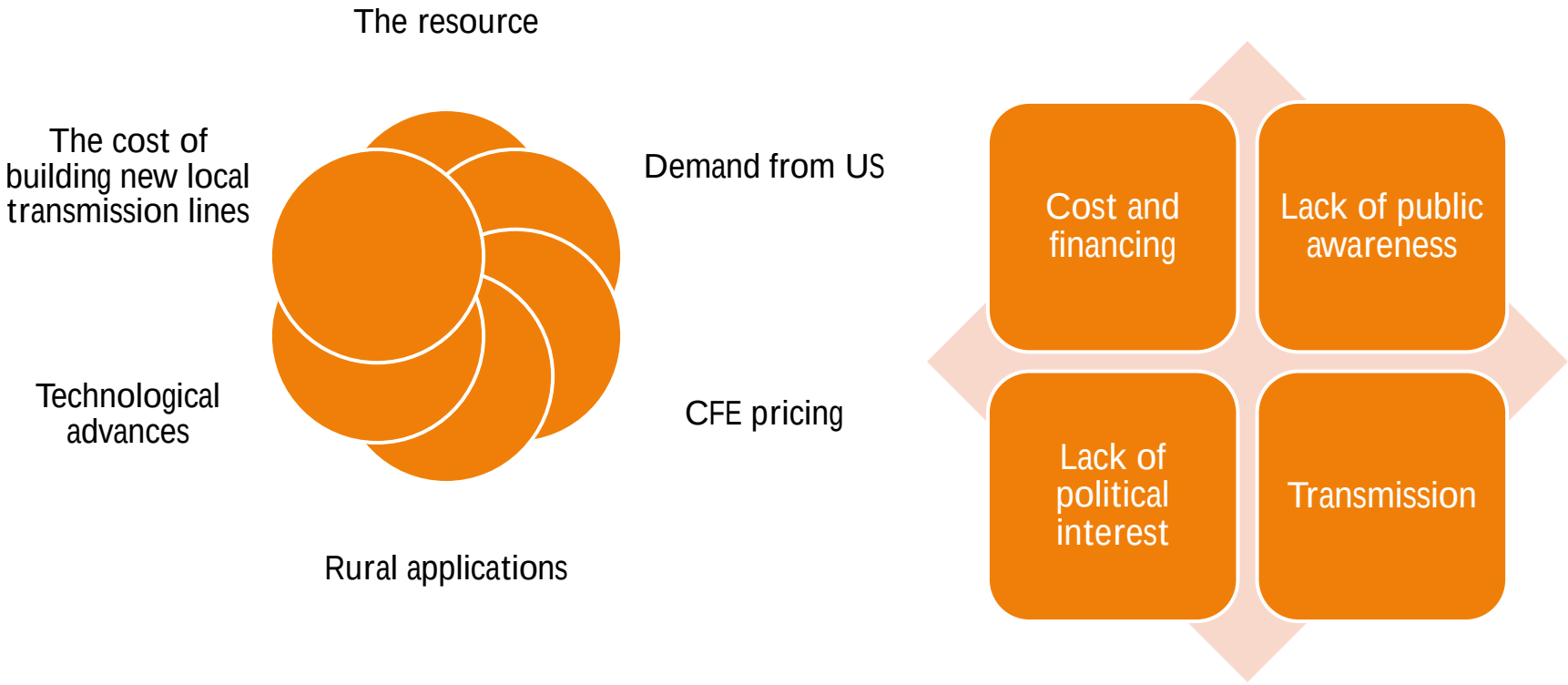
Mexico has one of the world's top solar resources: the richest area is concentrated on NW border

A 650 km2 of the Sonora desert filled with PV panels would be able to produce enough energy to completely satisfy national electricity demand



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Baja California	4.9	5.6	6.2	7.1	7.5	8.1	7.6	7.1	7.1	6.3	5.4	4.5
Sonora	4.3	5.2	6.4	7.7	8.6	8.6	7.3	6.9	6.6	5.8	4.8	4.3
Chihuahua	4.1	5.1	6.4	7.9	8.7	8.7	7.6	6.8	6.2	5.4	4.7	3.9
Coahuila	4.0	4.5	5.2	5.5	6.0	6.8	7.2	6.8	5.8	4.9	4.0	3.6
Tamaulipas	3.5	4.5	5.6	6.5	6.5	6.7	6.7	6.5	5.7	5.4	4.1	3.4
Nuevo León	3.7	4.1	4.7	4.9	5.5	6.3	7.0	6.4	5.8	4.4	3.8	3.5

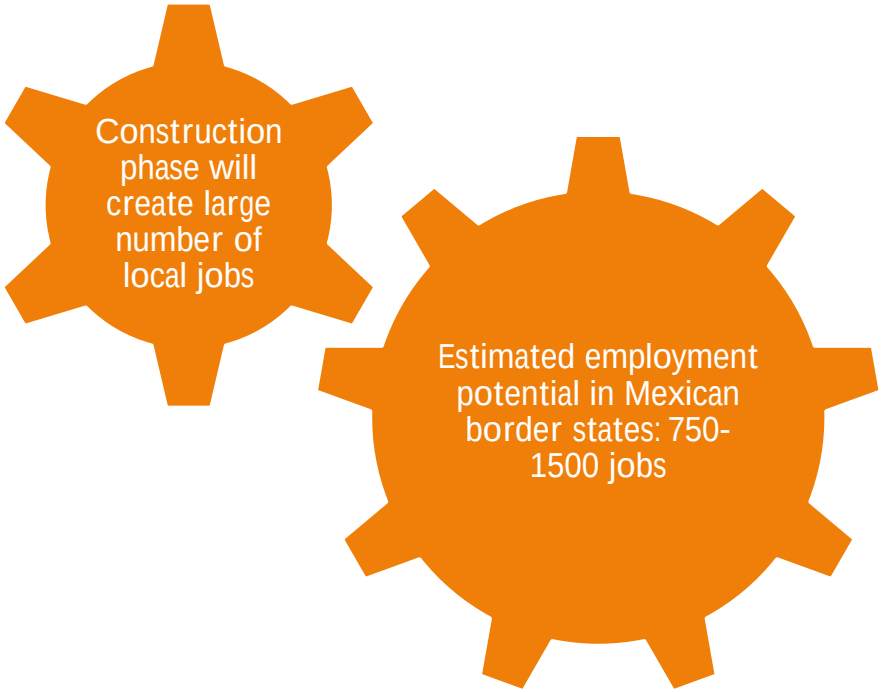
Solar development drivers



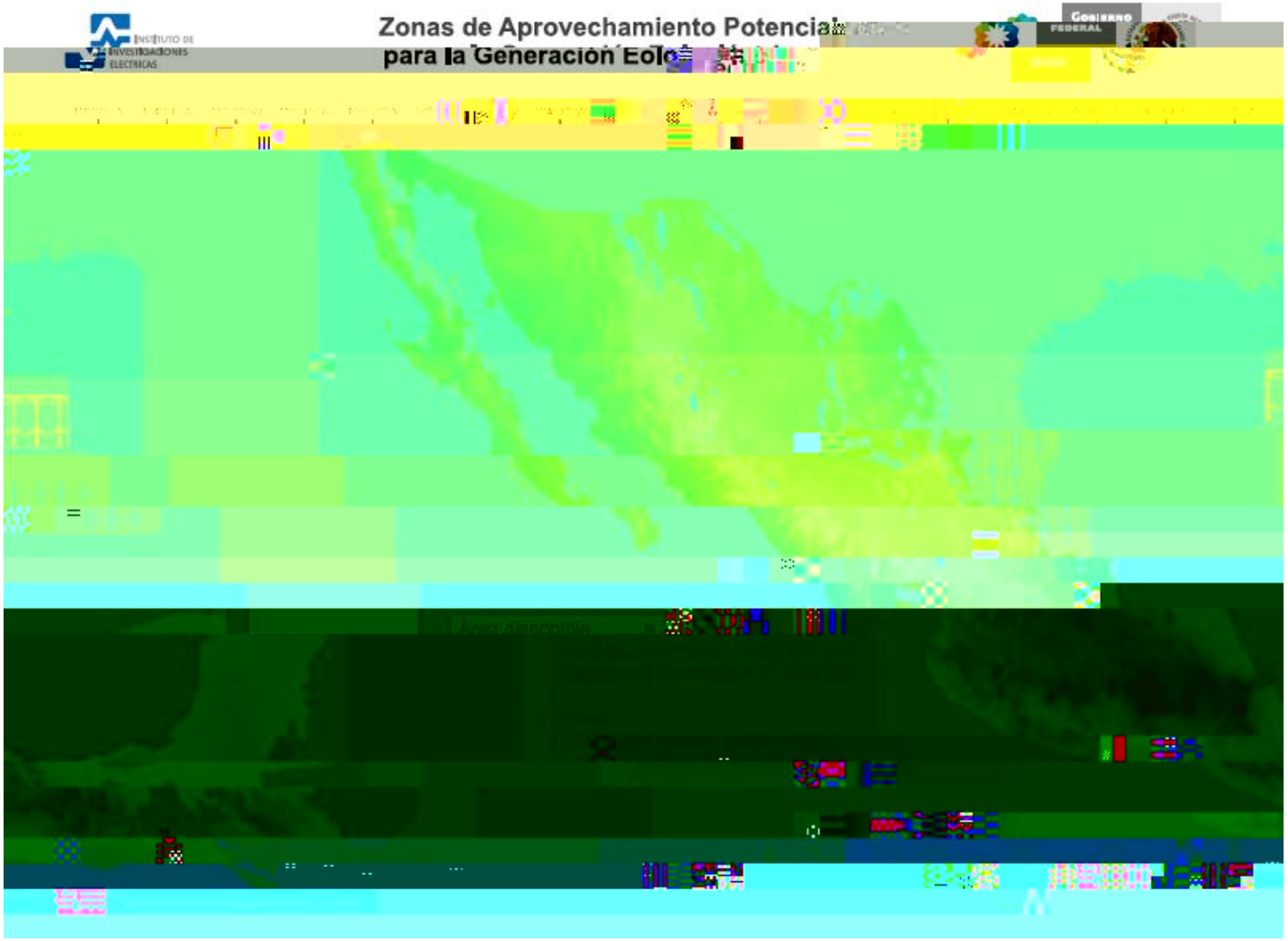
Monterrey biogas project

Bioenergia de Nuevo Leon

Job creation potential from biogas projects



Wind resource at the border



Tamaulipas

Los Vergeles, San Fernando (2012)

- 161 MW
- Financing: US$ 328 million
- Employment: 500 jobs in construction phase (2 yrs) plus 60 permanent jobs
- 25% reduction in GG
- Low cost electricity for municipal authorities(5-10% savings) – used for hospitals, schools, public lighting, public buildings.

El Porvenir wind park, Reynosa, (2013)

- 54 MW, 156.4 GWh/yr. (72 MW in 2nd stage)
- Financing: US$51 millionmia Tc 0 T

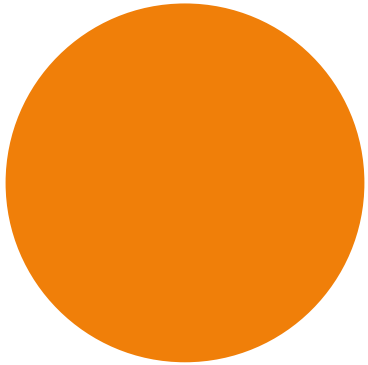
Baja California

La Rumorosa 1

- ‡10 MW project - US$27 million
- ‡Employment – 3 permanent, 500 construction jobs 6 months (7 engineers, 25 white collar)
- ‡Electricity for public lighting in Mexicali (80%) - savings (5-10%) for the municipality.
- ‡Subsidy of up to 50% for 35,000 families on CFE bills - Genhm64P7 forh020 1 illsog.8l5.32443( )/j-1.04orD[lcTD[w f)4imd[Ge)-n1.04o)3(r042 Td.04o)

Employment from wind energy

Challenges/opportunities



Barriers to wind projects

Next steps

Reactivate and move forward with bilateral talks

‡Bring in the states

Engage with Mexican border governors – the problems of the BGC

‡Overcome political "myopia" on both sides

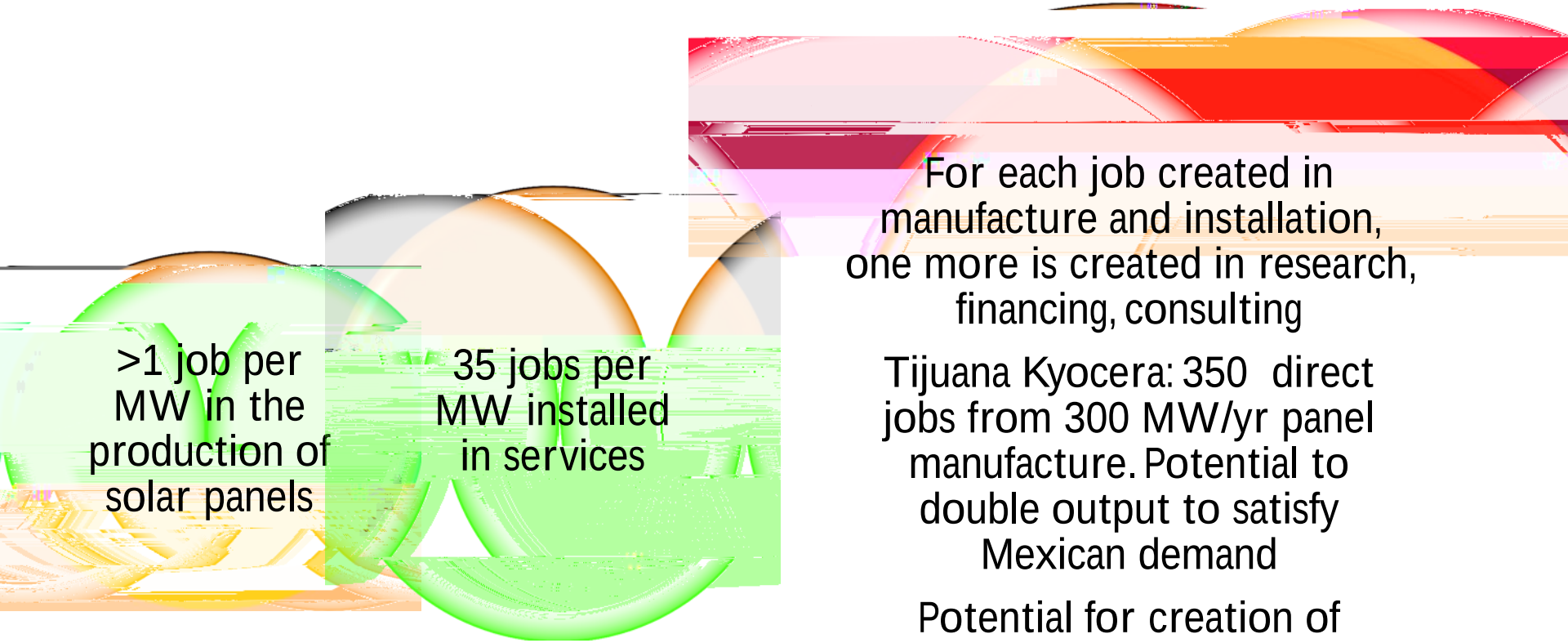
Deal with transmission financing

‡Public-private mix

Thank you!

Duncan Wood, duncan.wood@itam.mx

Solar sector employment

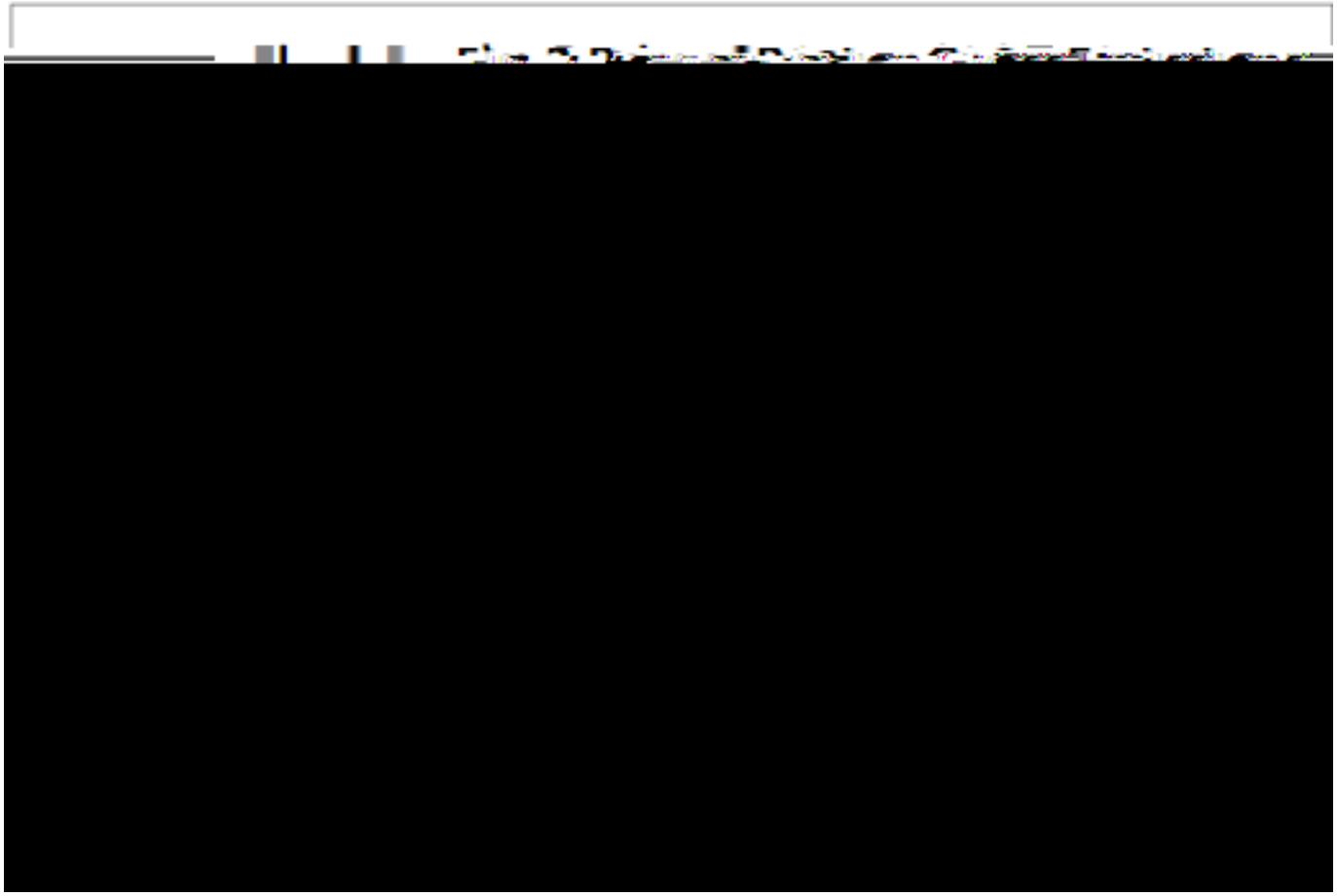


For each job created in manufacture and installation, one more is created in research, financing, consulting

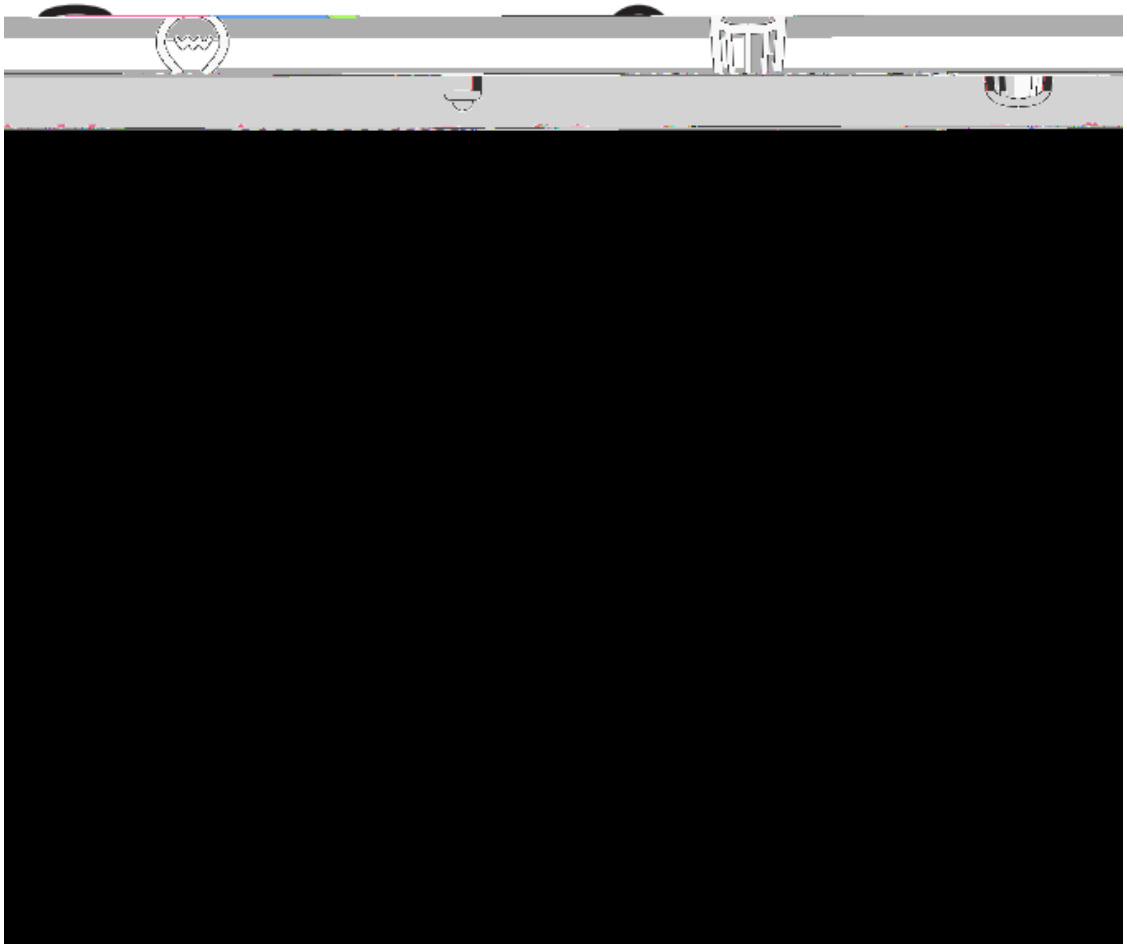
Tijuana Kyocera: 350 direct jobs from 300 MW/yr panel manufacture. Potential to double output to satisfy Mexican demand

Potential for creation of Mexican solar service industry

Mexican border states GG Emissions (COCEF study)



Benefits of biogas



Mexico’s potential in biogas development

Biogas potential from MSW in border states

MSW Feedstock Potential in Border Region							
State	Population	KG Generated	MT MSW Daily	MT MSW Annually	120 GL per M	70 GL per MT	40 GL per MT
Nuevo León	4,653,458	2024254.23	2024.254	738852.71	88662325.2	51719689.7	29554108.4
Chihuahua	3,406,465	1481812.275	1481.812	540861.38	64903365.6	37860296.6	21634455.2
Tamaulipas	3,268,554	1421820.99	1421.82	518964.3	62275716	36327501	20758572
Baja California	3,155,070	1372455.45	1372.455	500946.075	60113529	35066225.25	20037843
Coahuila	2,748,391	1195550.085	1195.55	436375.75	52365090	30546302.5	17455030
Sonora	2,662,480	1158178.8	1158.178	422734.97	50728196.4	29591447.9	2029127856
TOTALS	19,894,418	8654071.83	5257.36	3158735.185	379048222.2	221111463	2138567865