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Celebrate Chanukah, the Festival of Lights,
with alternative energy sources!

Renewable Light for a Renewable World

by Richard Gray, Chairman,
Federation of Jewish Men's Clubs Shomrei Ha-aretz

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The Power of Biomass: Clean Fuel from Waste!

by Dr. Tareq Abu Hamed, Director of the Center for Renewable Energy and Energy Conservation at the Arava Institute, and Carlyn Johnson, Student and Co-founder of the Allegheny College Ecological-Representatives program

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by Rabbi Eric M. Lankin, D.Min.
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Renewable Light *for a* Renewable World

By Richard Gray, Federation of Jewish Men's Clubs *Shomrei Ha-aretz* Chair

Shabbat candle-lighting transitions us from the secular to the holy. From the moment that you light the Shabbat candles, the world changes spiritually. Time has a different feeling, and a unique spirit is ushered into your home. **Substitute a Shabbat Eco Candle for the regular Shabbat paraffin candle, and the experience of Shabbat is further heightened.** This candle, manufactured with care for the environment, reinforces the traditional Jewish value that was given to the first man and first woman in the Garden of Eden, that is, to guard and protect the earth. Unfortunately, as our world has become more mechanized, some of that value has been lost.

Very few people today light Shabbat candles in the manner of our ancestors. Only a few hundred years ago, our ancestors welcomed the Sabbath by lighting oil lamps. The oil was usually olive oil, but our Rabbinic sources tell us that a variety of oils were permitted.

With the industrial revolution and the rise of petroleum as the prime energy source, lamp lighting and candle making also evolved. It was not until the 1800's that paraffin was made, replacing animal fat tallow as the main ingredient in candle making.

Today, traditional Shabbat candles are made from paraffin. Paraffin is an extract of kerosene and has a huge carbon footprint. In addition, the candles are often manufactured and transported from abroad, adding to the carbon footprint.

In 2008, the Federation of Jewish Men's Clubs (FJMC) created the first Shabbat Eco Candle. These candles are produced from an extract of soybeans and are manufactured in Iowa. **Every part of the candle is made from renewable resources.** The candles are either tea candles, or small votive candles that are placed into glass containers that fit traditional candle sticks. The soy candle reproduces much of the experience of an oil lamp, melting into a liquid pool as it is consumed.

The non-scented Shabbat Eco Candles are finding their way into environmentally-friendly homes, communal Shabbat celebrations, and as gifts to new members in synagogues and other Jewish organizations to symbolize the commitment of the community. Giving the candles as gifts symbolizes commitment to Shabbat and commitment to being *Shomrei Ha-aretz*, Guardians of the Earth.

An Eco Candle is a vehicle to help us symbolically return to what is important. When we light them, we are reminded that we are not wasting a non-renewable resource; instead we are maximizing renewable resources. **When we light them, we become more sensitized to what we should be doing.** Eighty percent of the beans from our farms are processed into soy meal for animal and human consumption. The remaining 20% is the soy oil used to create soy candle wax. Unlike petroleum products, a new soy crop grows the next year. **A renewable light for a renewable world.**

Soy Shabbat Eco Candles and supplies can be purchased from www.ecoshabbat.com or FJMC, at www.fjmc.org.

Richard Gray is a graduate Mechanical Engineer and longtime FJMC leader; currently International Secretary. As Chairman of the FJMC **Shomrei Ha-aretz**, *Stewards of the Land, initiative, he works closely with FJMC Executive Director Rabbi Charles Simon to bring new ideas to the Jewish community primarily through FJMC Men's Clubs in Conservative Synagogues. His family strongly supports his interest and commitment to environmental awareness.*

FJMC initiatives include soy Shabbat Eco Candles, a solar **ner tamid**, *bio-degradable disposable plates and flatware, and relationships with organizations to jointly promote environmental education and improvements in our communities*

Click here to listen: Matisyahu sings about nature.

Click here to use Eco Candles in your Chanukiah!

The Power of Biomass: Clean Fuel from Waste!

By Dr. Tareq Abu Hamed, *Director of the Center for Renewable Energy and Energy Conservation at the Arava Institute for Environmental Studies, Kibbutz Ketura, Israel*
and Carlyn Johnson, *Student and Co-founder of the Allegheny College Ecological-Representatives program*

With concerns about global climate change mounting and demands for energy increasing, now is the time to invest in clean, renewable energy resources. Energy produced from renewable resources is much cleaner than energy which is produced from fossil fuels and can be created from abundant resources, such as the wind, sun, and waste. Yes, waste! Today, fossil fuels such as coal, oil, and natural gas account for 81% of the world's total energy production, while the remaining 19% is made up of renewable energy resources.

One promising, clean, renewable energy resource that can replace a portion of fossil fuels is biomass. Biomass is made from any organic material that is part of the carbon cycle, such as plants and animal waste. Biomass materials absorb carbon from the atmosphere as food and release it as carbon dioxide and methane gases upon decomposition. After new plants and animals reabsorb this carbon, the cycle begins again.

The idea behind using biomass as fuel is to use resources which naturally renew themselves for energy rather than non-renewable, carbon-dense fossil fuels from below the surface of the earth. (Fossil fuels are not considered biomass material because they come from under the earth's surface and, while they were originally plant material, they have not been a part of the earth's natural carbon cycle for millions of years.)

Using biomass for energy results in no net increase of greenhouse gases in the atmosphere. Greenhouse gases are essential for the existence of life on earth because these help regulate the earth's temperature and keep it warm. However, by increasing the amount of greenhouse gases in the atmosphere, we are jeopardizing the earth's natural climate regulation system.

So, how do we use biomass as an energy resource? The most common way is combustion, for example, burning wood in a fire to cook food. There are, however, more efficient ways to convert biomass into energy. It can be converted into gaseous, liquid, and solid fuels. These fuels can be burned in a power plant to drive a gas turbine and generate electricity. They can also be used in conjunction with fuel cells and be converted into electricity with only water as a byproduct. Even more encouraging, there are already many untapped biomass resources that can be utilized on a massive scale immediately. Agriculture and animal waste are both ideal biomass resources because they can be produced on a large scale.

There is some concern over whether land use for biomass will compete with land use for food production. Having less land allocated to food production may cause a decrease in food supply and an increase in food prices. One solution that could help minimize this issue would be to use only agricultural waste as biomass. There is approximately 73.9 million tons of dry wasted crops (corn, barley, oat, rice, wheat, sorghum, and sugarcane) in the world. This amount of wasted agriculture alone could replace 3.2% of the world's gasoline consumption. By using this waste as biomass, land can continue to be used for agricultural purposes, and therefore food prices will not be affected.

Another major benefit of using agriculture for biomass is that the agriculture can be grown with salty water, and therefore avoids putting stress on fresh water supplies. Furthermore, this makes biomass agriculture ideal for desert locations where the groundwater is salty and there is ample unoccupied land. Many saltwater crops are fast growing, making this type of agriculture more cost effective. These advantages, in combination with biomass's emission-free qualities, make it a strong candidate as a primary renewable energy resource. By taking advantage of biomass resources, dependence on fossil fuels can be reduced and a clean, renewable system of energy production can emerge.

Click Here to Watch: The Arava Institute

Click Here to Watch: Biomass Fuels

Carlyn Johnson is a student at Allegheny College in Meadville, PA. She is the co-founder of the Allegheny College Ecological-Representatives program. Carlyn received several awards and honors: Morris K. Udall Scholarship, Allegheny College Trustee Scholarship and Alden Scholar Award (Dean's List).

Dr. Tareq Abu Hamed is the Director of the Center for Renewable Energy and Energy Conservation at the Arava Institute for Environmental Studies. He holds a PhD in Chemical Engineering from Ankara University in Turkey and conducted research at the Weizmann Institute of Science in Israel and the University of Minnesota in the United States. Dr. Abu Hamed received the 2008 Dan David Prize, *for Social Responsibility with Particular Emphasis on the Environment.*

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Jewish National Fund is a proud partner of the Arava Institute.

Click here to watch: Candle Lighting at the Kotel
Click here to watch: Israeli Soldiers Celebrate Chanukah

Chanukah in Eretz Yisrael

The Land Behind the Chag

by Rabbi Eric M. Lankin, D.Min.
Chief of Institutional Advancement and Education, Jewish National Fund

For some, Chanukah is all about presents and fun. That is understandable considering that many Jewish families have adopted the focus of gift giving from Christmas, celebrated around the same time in December. Interestingly, even before the influence of Christmas, Jews traditionally gave gifts of *gelt* (Yiddish for money) for Chanukah, especially coins, to remember that the victorious Maccabees issued a currency to celebrate their newfound freedom from Syrian-Greek domination.

Putting Chanukah back into the context of the time and place where it first occurred can bring a greater understanding of the holiday and add meaning to your celebration. **The actual land, where our ancestors lived, played an important role in how events unfolded.** When you understand Israel's physical location in the Middle East and its unique geography, a better understanding of Chanukah is possible.

Dreidel (Yiddish for top) games often are among the most prominent outward activities of the eight-day Chanukah festival. The dreidel used in the Diaspora is decorated on each of its four sides with Hebrew letters signifying the connection to the holiday with the idea that "a great miracle happened there." Of course, "there" is *Eretz Yisrael* — the Land of Israel. Those who have celebrated Chanukah in Israel know that in Israel the Hebrew letters on the dreidel (called *sivivon* in Hebrew) signify that **"a great miracle happened here."**

Very few of the Jewish holy days/festivals have a central focus on events that occurred in Eretz Yisrael, as Chanukah does. In ancient times, special sacrifices and observances occurred in the *Beit HaMikdash*, the Holy Temple in Jerusalem, on the *Yamim Noraim*, the High Holy Days. However, today the Yamim Noraim could be observed anywhere. The same is true for the three pilgrimage festivals: Pesach, Shavuot and Sukkot. Although the Jewish people were encouraged to observe these festivals in Jerusalem, the events of the first Pesach occurred in Egypt; the events of the first Shavuot occurred at Mount Sinai somewhere in the Sinai desert; and the first *sukkot* (huts) were built in the Sinai desert.

Chanukah is different from these holidays in that the entire story of the events leading up to the first Chanukah all occurred in Eretz Yisrael. The Land of Israel is a critical part of the story – **the Maccabees were farmers, and their deep connection to the land both inspired them and gave them an edge against the foreign armies.**

The story of Chanukah really begins with the conquest of the lands controlled by the Persian Empire (including Eretz Yisrael) by the Macedonian Greek emperor Alexander the Great in the year 331 BCE. The four books of the Maccabees (found in two collections called the Apocrypha and Pseudepigrapha) which tell the story of Chanukah do not generally describe Alexander's conquest of Eretz Yisrael in negative terms. However, Hellenism, the religion and culture that Alexander brought to Israel with its multiple gods, was very threatening to the prevailing traditional Jewish culture believing in One God. After Alexander died in 323 BCE, the empire was divided among his generals — Ptolemy who ruled over Egypt and Seleucus who ruled over the Syrian region. **The two dynasties fought over the territory located in the middle: Eretz Yisrael.** In 198 BCE, the forces of Seleucids defeated its enemies for control of Israel. Although there was tension between those Jews who adopted Hellenistic customs at the expense of Jewish practice (like the practice of circumcision) and traditional Jews, it wasn't until the reign of Antiochus IV Epiphanes that the situation in Eretz Yisrael grew dramatically more tense, leading to a civil war among Jews. To make matters worse, the King and his Syrian-Greek Army got on the side of the Hellenizers in the civil war which brought the Maccabees not only fighting with Jewish Hellenizers but with the Syrian-Greek Army directly.

The small band of fighters, mostly made up of farmers, led by Judah, called the Maccabee (hammer), fought the well-trained and supplied Syrian-Greek Army. **Judah's knowledge of the land itself was an important tool because the Maccabees used guerrilla tactics to secure their victory.** (It's important to note that for many hundreds of years the bulk of the Jewish people lived in the mountains in the center of the Land of Israel. Although today's Israel enjoys the beach on the Mediterranean Sea, it wasn't that way for many years.)

The First Book of the Maccabees (3:15-26) describes the events of one of the significant battles, the battle of Beth Horon in 166 BCE where a small Maccabean force engaged a much larger Syrian-Greek force led by a leading general named Seron. **Because the Maccabees had superior knowledge of the terrain, they were able to take advantage of a mountain pass between Modin and Jerusalem.** Judah and his forces swooped down from the heights of the mountains and crushed the enemy in the pass below with 800 enemy soldiers being killed in the battle.

The First Book of the Maccabees (3:20) goes on to describe the Syrian-Greek enemy's goal for the Maccabees, "to destroy us and our wives and our children and plunder us, but we are fighting for our lives and our laws." This is a profound reminder that when we, in our generation, celebrate Chanukah with our gifts, games and songs, **it was the faith of the Maccabees in God, their heroism and their connection to the land itself, Eretz Yisrael, that fueled their commitment and enabled their miraculous victory.**

Rabbi Dr. Lankin, the senior educator for JNF and a member of its Executive Management, is a proud Zionist.

The KEY to Cleaner Driving

by Alex Chernin, Student Reporter

Alex Chernin is a junior at West Morris Mendham High School in Mendham, NJ. Her favorite activities are playing tennis, running, singing, shopping and hanging out with friends and family. She loves to write and truly wants to make it her mission to save the environment.

Are you looking forward to the freedom and responsibility of driving when you get your license? **Do you think your parents trust you to drive safely and in a way that conserves gas?** Ford Motor Company recently introduced a feature called **MyKey**, a programming device that will allow your parents to limit the speed and the radio volume in the car when you drive. Ford Motor Company states that **MyKey** will keep roads safer and more fuel-efficient because it also encourages safety-belt usage and provides earlier low-fuel warnings.

Here's how **MyKey** works: If you don't fasten your seat belt when you start to drive, the *beltminder chime* will sound every six seconds for five minutes, and **the audio system will be muted until the safety belt is buckled.** *"Buckle Up to Unmute Radio"* will appear on the message center display. **MyKey** can also be programmed to beep when the car reaches an excessive speed or a speed that is above your parents' preset approval level. Other safety features include *Park Aid* to help you park, and *Cross Traffic Alert with Blind Spot Monitoring System,* a system which uses radar to alert you to cross-path traffic when you are in reverse. When moving forward, the *Cross Traffic Alert with Blind Spot Monitoring System* warns when a vehicle enters your blind spot. In a car equipped with **MyKey**, the driver will not be able to deactivate these features. **MyKey** is a standard feature on the 2010 Ford Focus and will soon be offered on many other Ford, Lincoln and Mercury models.

While its main purpose is to persuade (or force) teen drivers to drive more safely, Ford notes that using **MyKey** to teach teens to avoid speeding **can provide an added benefit – improved fuel economy.** Research shows that driving 55 mph instead of 65 mph consumes 15 percent less fuel, and mastering other eco-driving habits such as avoiding jackrabbit starts and excessive idling can help improve fuel economy by more than 50 percent. In the long-run, teens will be burning less gas on the road.

While the **MyKey** innovation may provide some relief from worry to parents of teenagers everywhere, many teenagers feel that it intrudes on their privacy. They feel that **it limits the new freedom they have earned by learning to drive.** However, about 50 percent of the parents who would consider purchasing **MyKey** also said they would allow their children to use the family vehicle more often if it were equipped with the new technology.

Personally, as a teen about to receive my license, I agree with the standards the **MyKey** device sets. Being an environmentally-conscious teen, using too much fuel on the road is a huge concern of mine. Cutting back on speed in teenager's cars **will create a cleaner environment and will also help to keep my friends and me safer on the road.**

Click here to watch: Teens and MyKey

Would you like your family to own a car equipped with MyKey?
Click here to vote and comment.

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